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GLEANINGS IN BEE CULTURE

VOL. 34

AUGUST 15, 1906

NO. 16



A. I. Root, Demonstrating Caucasians at the Jenkintown Field Day, June 26th.

THE A. I. ROOT CO.,
MEDINA — OHIO

Honey Markets.

GRADING-RULES.

FANCY.—All sections to be well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel stain, or otherwise; all the cells sealed except an occasional cell, the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 2.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 3.—Three-fourths of the total surface must be filled and sealed.

No. 4.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

CINCINNATI.—We are receiving numerous shipments of comb honey at the present time, and find ready sale here for fancy and No. 1 at 14 to 15, in a jobbing way. This is a poor market for grades lower than No. 1. The receipts of extracted honey are normal, although the demand is not so good as it was sixty days ago. Nevertheless, there is no material change in prices. We are selling amber in barrels and cans at 5 to 6%. Fancy white at 6% to 8%. For choice beeswax, free from dirt, we are paying 30 cts. per lb. delivered here.

THE FRED W. MUTH CO.,

Aug. 3. 51 Walnut St., Cincinnati, O.

BUFFALO.—Demand for new honey is very slow; selling in a slow way to grocers who buy one case at a time. The price is higher than buyers want to pay, and are waiting, thinking it will be lower. As soon as the fall price for this year's crop is established I look for quite a good demand for white comb. Our market is not much for extracted except to the baker trade and peddlers. We quote fancy white comb 14 to 15; No. 1, 13 to 14; No. 2, 11 to 12; No. 1 dark, 11 to 12; No. 2 dark, 9 to 10. Extracted, white, 6% to 7; dark, 5% to 6. Beeswax, 28 to 30.

Aug. 8. W. C. TOWNSEND, Buffalo, N. Y.

PHILADELPHIA.—Advices from different points are rather conflicting in regard to the honey crop this season, and consequently there is no market price established. Some new arrivals of comb honey sell at 13 to 15, according to quality, and extracted honey at 6 to 7. Beeswax, firm at 28. We are producers of honey, and do not handle on commission.

Aug. 9. WM. A. SELSER,
10 Vine St., Phila., Pa.

BOSTON.—As usual, the demand for honey is very light; but some inquiry is being made for new crop. Prospects are looking good, and our market ranges with light supplies from 15 to 16 for strictly new fancy white, and from 5 to 8 for extracted, according to quality.

Aug. 8. BLAKE, SCOTT & LEE,
31-33 Commercial St., Boston, Mass.

TOLEDO.—The market on comb honey remains about the same as last quotations. Very little comb honey is being received, and no stated price has yet been fixed. Bee-keepers seem to be holding their crops to find out what the price will be. We are getting in a retail way 15 and 16 for fancy white comb honey and 14 to 15 for No. 1, with not much of a demand at present. Extracted white clover in barrels is worth from 6 to 6%, cans the same. Beeswax, 28 and 28.

Aug. 7. GRIGGS BROS.,
Toledo, Ohio.

CHICAGO.—There are now offered some good lots of comb honey; and while the trade in it is not active it is taken at 15 to 16 for fancy; 14 to 15 for No. 1; 12 to 13 for fancy amber, and 8 to 10 for fancy dark. Extracted is slow of sale, with prices according to quantity and quality. White extracted is 6% to 7%; amber, 5% to 6%; dark, 5 to 5%. Beeswax wanted at 30.

Aug. 6. R. A. BURNETT & CO.,
199 So. Water St., Chicago, Ill.

SCHENECTADY.—The exceedingly hot weather of the past week has checked the sale of honey considerably. At present indications are that prices will range about the same as last season, possibly a little lower if buckwheat should be a large crop.

Aug. 8. C. MACCULLOCH, Schenectady, N. Y.

KANSAS CITY.—On account of the heavy receipts of all kinds of fruit, the demand for honey, both comb and extracted, is very limited. We are quoting No. 1 fancy white in 24-section cases at \$3.00; No. 2 at \$2.75 per case. There is no new extracted in market, old selling at 5% to 6. Beeswax, 25.

Aug. 9. C. C. CLEMONS & Co., Kansas City, Mo.

FOR SALE.—Choice extracted clover honey. Extra choice, selected from all new combs, in round-jacketed five-gallon cans, for family use; \$5.00 per can. Prices on larger quantities in 60-lb. square cans, two cans in case, on application. Sample, 5 cts.

G. A. BLEECH, Jerome, Mich.

FOR SALE.—Light extracted honey, good quality; two 60-lb. cans, 8½¢ per lb., barrel at 7½¢; amber, 60-lb. cans at 7½¢, barrel at 6¢; sample, 10c. We pay 29c for beeswax. I. J. STRINGHAM, 105 Park Pl., N. Y.

FOR SALE.—Well-ripened fancy extracted clover and basswood honey in 60-lb. tin cans, two in a case, at \$10.00 a case f. o. b. here. Sample on request.

ERNST W. FOX, Hillsboro, Wis.

FOR SALE.—100 cases extracted honey, white and light amber, at 5½¢ per pound, f. o. b. Kansas City. Will mail sample upon request.

C. C. CLEMONS & Co., Kansas City, Mo.

FOR SALE.—3000 or 4000 pounds white comb honey. R. J. SMITH, State Road, Essex Co., N. Y.

WANTED.—Comb and extracted honey. State quality, quantity, and price.

JUDSON HEARD & Co., Atlanta, Ga.

STANDARD BRED QUEENS.

BUCKEYE STRAIN RED CLOVER GOLDEN ITALIANS

By Return Mail. Safe Arrival Guaranteed.

PRICES

	ONE	SIX	TWELVE
Untested	\$0.75	\$4.00	\$7.50
Select Untested	1.00	5.00	9.00
Tested	.50	8.00	15.00
Select Tested	2.00	10.00	18.00

Select Breeders, each \$3.00
Two-frame Nucleus and Red Clover Queen 3.00

THE FRED W. MUTH CO.,

No. 51 WALNUT ST.,

CINCINNATI, OHIO.

FOR SALE.—Superior grades of extracted honey for table use. Prices quoted on application. Sample, 10 cts. to pay for package and postage.
O. L. Hershiser, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—Choice white comb and extracted honey; clover preferred.
B. WALKER, Clyde, Ills.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 S. Water St., Chicago, Ill.

WANTED.—Well-ripened extracted basswood and clover honey, light in color; prompt payment on receipt; 7½c per lb., f. o. b. West Bend.
H. C. AHLERS, West Bend, Wis.

WANTED.—Beeswax. Will pay spot cash and full market value for beeswax at any time of the year. Write us if you have any to dispose of.
HILDRITH & SEGELEKEN,
265-267 Greenwich St., New York.

WANTED.—To buy for cash, fancy comb and extracted honey.
ROBT. A. HOLEKAMP,
4263 Virginia Ave., St. Louis, Mo.

WANTED.—Fancy white comb honey, also extracted honey in barrels. Send samples, and name best price delivered here.
GRIGGS BROS., Toledo, O.

WANTED.—Fancy white comb and extracted honey. I pay cash—no commission.
WALTER S. POWDER, Indianapolis, Ind.

WANTED.—Beeswax. We are paying at this date for pure average beeswax delivered at Medina or any branch office named below, 27 cts. in cash or 30 cts. per lb. in exchange for bee-supplies, less transportation charges. We can not use old combs. Pack securely and address plainly. Be sure to send bill of lading when you make shipment, and advise us how much you send, net and gross weights. Ship to home office or nearest branch named below.

THE A. I. ROOT CO., Medina, Ohio.
Chicago, 144 East Erie St.; New York, 44 Vesey St.; Philadelphia, 10 Vine St.; Washington, 1100 Maryland Ave., S. W.

WANTED.—A case of two 60-lb. cans of extracted honey (1906 crop) of each variety or source from every State in the U. S.; also from Canada, Mexico, West Indies, and other accessible countries. With each lot is required a certificate guaranteeing absolute purity of the honey, and gathered from the source named. Exceptional care must be taken to have the honey well ripened, of good representative color from source named. The honey should be extracted from clean new combs free from pollen. An extra price of about 2 cts. per pound will be paid for such honey, or we will arrange, if desired by any, to supply those co-operating and furnishing sample shipments, with ¼-lb. samples of each variety secured, labeled with name of producer, year, and source of honey. We expect to secure about sixty varieties of American and foreign honeys. Do not ship, but advise us what you can furnish, and on what basis.
THE A. I. ROOT CO., Medina, O.

POULTRY DOLLARS COME EASY.

Our large 52 to 112 page beautifully illustrated magazine, best printed and edited poultry journal, makes it easy to add dollars to your income by keeping a few hens on a town lot or make a success on a large scale, covers every thing. Contains information that will put you in comfortable circumstances if followed. POULTRY SUCCESS one year, 50 cts. Large illustrated poultry book free to annual subscribers. Three months' trial, 10 cts. POULTRY SUCCESS CO., Springfield, Ohio.

GET RID OF LICE.

For 25 cts. we send formula that never fails to exterminate lice. Costs less than 8c per lb. to make. Guaranteed. Used by many leading poultrymen.
T. T. POULTRY CO., Springfield, Ohio.

The Danzenbaker Twentieth Century Smoker

Awarded Highest Prize
A GOLD MEDAL:
at the World's Fair,
St. Louis, 1904.



**UP-TO-DATE,
STRONGEST,
COOLEST,
CLEANEST.**

It has a side grate that strengthens the fire-cup, and holds a removable metal and asbestos lining that keeps it cool, adding to its durability. It has no valves to get out of order or snout to clog.

Every Thing Guaranteed "Root Quality."

ALL THAT IS CLAIMED.—The General Manager of the National Bee-keepers' Association says:

I have given your Twentieth Century a thorough trial. For convenience in lighting, durability, and long time one filling will last and give ample smoke, I find it all you claim. In the spring I shall want several. I always want the best.

N. E. FRANCE, Platteville, Wis.

SURPASSES ALL OTHERS.—"After giving the Danzenbaker Twentieth Century Smoker several trials, can say it surpasses all smokers it has been my liberty try; it will not go out until fuel all consumed, and it produces a cool smoke, a feature very necessary in any first-class smoker." GRANT STANLEY, Nisbet, Pa.

Prices: By mail, \$1.25; three, \$3.25.

By express or freight, one, \$1.00; three, \$2.50.

For further particulars, see Dec. 15th Gleanings, page 1370; sent free with price list.

F. DANZENBAKER, MIAMI, FLORIDA

Fruit Growers and Farmers.

Thousands of the best fruit-growers and farmers read the **Southern Fruit Grower** because they find it the most helpful fruit paper published. Contains 24 to 40 pages of valuable fruit and farming information every month. 50c a year. Send 10c and 10 names of fruit growers and get it six months on trial. Sample free.

The Southern Fruit Grower, Box 1, Chattanooga, Tenn.

EVANS & TURNER, Columbus, Ohio,

will be in the market for white comb honey, and especially want some fine stock from Wisconsin, Michigan, Indiana, and New York. They would also like to hear from Iowa producers. Write fully what you expect to have; and if you care to name price, do so, stating about what time your crop will be ready to move.

Chas. Israel & Brothers 486-490 Canal St., New York.

Wholesale Dealers and Commission Merchants in Honey, Beeswax, Maple Sugar and Syrup, etc. Consignments Solicited. Established 1875.

H. C. Simpson, Catawba, S. C.

Dealer in
BEE - KEEPERS' SUPPLIES!
Breeder of Italian bees and queens.
Root's Goods a specialty.

Gleanings in Bee Culture

Devoted to Bees, Honey, and Home Interests

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Circulation 30,000. Reaches every State and 60 foreign countries.
Established in 1873. Sixty-four pages. Semi-monthly.
Published by The A. I. Root Company, Medina, Ohio, U. S. A.

Terms---\$1.00 per annum; 2 years, \$1.50; 3 years, \$2.00; 5 years, \$3.00, in advance.

Postage is Prepaid by the publisher for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, Canada, and Mexico. For all other countries in the Postal Union add 48 cents per year for postage.

Change of Address.—When a change of address is ordered, both the new and the old address must be given. The notice should be sent one week before the change is to take effect.

Discontinuances.—The journal is sent until orders are received for its discontinuance. We give notice just before the subscription expires, and further notice if the first is not heeded. Any subscriber whose subscription has expired, wishing his journal discontinued, will please drop us a card at once; otherwise we shall assume that he wishes his journal continued, and will pay for it soon. Any one who does not like this plan may have it stopped after the time paid for it by making his request when ordering.

How to Remit.—Remittances should be sent by Draft on New York, Express-order or Money-order, payable to order of THE A. I. ROOT COMPANY, MEDINA, OHIO. Currency should be sent by Registered Letter.

Agents.—Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

Foreign Subscription Agents

Foreign subscribers can save time and annoyance by placing their orders for GLEANINGS with any of the following authorized agents, at the prices shown:

Paris, France. E. BONDONNEAU, 142 Faubourg St. Denis. *Per year, postpaid, 5¼ fr.*

Kingston, Jamaica. HOOPER BROS., 20 Orange St. *Per year, postpaid, 5/6.*

Goodna, Queensland. H. L. JONES. Any Australian subscriber can order of Mr. Jones
Per year, postpaid, 5/6.

Dunedin, New Zealand. ALLIANCE BOX CO., 24 Castle St. *Per year postpaid, 6/.*

Other names will be added from time to time.

THE A. I. ROOT CO., Medina, Ohio, Publisher.

Find enclosed.....for which please send me Gleanings in Bee Culture.....months, and.....as per offer.....
Please continue sending Gleanings until otherwise ordered.

NAME.....

POSTOFFICE.....

COUNTY.....STATE.....

DATE.....

If you want Gleanings discontinued at expiration, check here ()

RASPBERRY HONEY!

I have produced a crop of extracted honey from the wild red raspberry of Northern Michigan. It would be an easy matter to send this entire crop in a lump to some dealer, but I prefer to give each of my friends an opportunity of supplying his table with this truly delicious honey—a honey with a flavor all its own—a flavor that smacks of the wild raspberry of the forest.

The honey is put up in 60-pound cans, two in a case, and a single case (120 pounds) will be sold at 8½ cents a pound (\$10.20 for a case) and larger orders will be

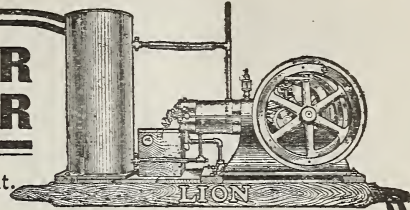
filled at 8 cents a pound (\$9.60 a case) but not less than that, even though the whole crop should be taken.

If you prefer to taste the honey before ordering, drop me a postal, and I'll mail you a generous sample—enough so that the neighbors, too, can have a taste, and perhaps will wish to join you in ordering a case, if you should not care to take that much yourself.

W. Z. HUTCHINSON, Flint, Michigan.

A READY POWER AT ANY HOUR

That's the kind of a power you want. You do not have to wait for steam, or until the wind blows, before you can pump water, grind feed, saw wood or the hundred and one other jobs about the farm, if you have a **Lion Gas or Gasoline Engine**. Have you ever thought just what a saving of time, labor and money it would be to have such a practical power always ready to operate your various machines on the farm, in the shop, printing-office, or—anywhere?



The LION Engine



is such a power. It is **simple** in construction, **practical** in operation, and **economical** in the use of fuel. You do not require the services of an engineer, as anyone can operate it. We send the **Lion engine**

Direct From The Factory

on a **ten days test trial** and give explicit instructions and directions for setting up and operating it. Write now, stating your power needs, for our easy payment plan. Remember, we send the **engine**, not the agent.

LYONS ENGINE CO.,

Lyons, Mich.

GOLDEN Opportunities!

EXIST in the South, and the Seaboard Air Line's monthly magazine will point them out to you. If you are thinking of changing your location, engaging in other business, want a winter home, a summer home, or a place for all-the-year-round residence, want an orange grove, a banana plantation, a pineapple grove—in fact, anything, and want it in Virginia, the Carolinas, Georgia, Alabama, or Florida, the magazine will assist you.

Sent free on request, together with other handsomely illustrated literature descriptive of the South and its wonderful resources and progress.

J. W. WHITE

Gen. Indus. Agt., Portsmouth, Va.

Seaboard Air Line Railway

Let Us Send You Our Book.

about good wheels and good wagons that will save you a lot of work and make you a lot of money—the

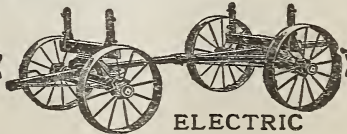
ELECTRIC STEEL WHEELS

—and the—

ELECTRIC HANDY WAGON.

By every test, they are the best. More than one and a quarter millions sold. Spokes united to the hub. Can't work loose. A set of our wheels will make your old wagon new. (catalogue free.)

ELECTRIC WHEEL CO., Box 95 Quincy, Ills.



ELECTRIC



LAWN FENCE

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Cemeteries and Churches. Address **COILED SPRING FENCE CO., Box 448 Winchester, Ind.**

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ADVERTISING TALKS

BY THE AD. MAN.

CLASSIFIED ADVERTISEMENTS.

Many of the popular magazines are adding classified columns to their advertising pages, and spending much money in exploiting them. They particularly call attention to the remarkable results obtained by some advertisers. GLEANINGS has carried a similar department for over twenty years. This department has always proved popular, and during a part of the year it occupies from three to four pages. We occasionally receive reports of great results from a small reader, with but one insertion; but the average runs high enough so that we can freely recommend these columns to practically every one wanting small advertising where a display ad. would not do.

Turn to page 1090 and look at these ad's. Do you need any thing listed there? Have you any thing you wish to dispose of?

Our rates are 15 cts. a line to *bona-fide* exchange deals, and 20 cts. a line to those involving cash, either directly or indirectly. Those offering honey or advertising honey are placed under "Honey Markets" on page 1038. This department is for the personal use of our 30,000 subscribers. Read and try. It pays.

❖ *Change that copy! A dead ad. has about as much pulling power as a dead horse.*

Below is a letter from Mr. Alexander regarding his ad. appearing in GLEANINGS for July 15, under the heading "Help Wanted," in classified columns. You will note the date is so soon after that issue of GLEANINGS that hardly every paper had reached its destination, and impossible for every reply to have reached Delanson.

Mr. Root:—Please discontinue our ad. in GLEANINGS for help, as we have been almost flooded with applications since the last issue. This certainly is a fine way to get good competent help.
Delanson, N. Y., July 24. E. W. ALEXANDER.

❖ *Talk plain sense! An ad. is the worst place to get wordy or funny.*

THIRD PHOTO CONTEST.

A good photo is a splendid advertisement for you, Mr. Beeman. Perhaps it's a view of your apiary; a mammoth swarm; some fancy honey, or a hundred and one views found around any apiary. It will pay you to have a number of them. You can work them with your letter-head, on postal cards, and in any advertising matter. And there's our photo contest. If you have a first-class photo you stand an excellent chance of winning one of our cash prizes. If your photo appears in GLEANINGS you get a lot of free advertising. See condition of contest on page 1038.



ADVERTISE YOUR HONEY.

After you have spent almost a year in planning and working for your crop, why stop and allow it to sell at low prices, or move very slow? Honey markets are the best when rightly worked.

Your grocer likes to handle goods that sell fast. He is willing to sell on smaller margins, thus the producer gets better prices. Help your retailer by supplying him with display cards. He will appreciate it and sell more honey.

The above is a reduction of our new honey-display card. It is printed on 7x9-inch cardboards, and with a beautiful blue ink. Price 10 for 10 cts., postpaid; any additional, one cent each. In ordering be sure to specify style No. 2, or you are apt to receive another card.

❖ *Be brief! Your ad. in Gleanings, costs you, on the average, word for word, about as much as the common telegram.*

We receive very frequently letters from our readers who desire to say, as has Mr. Struck, "a few things for GLEANINGS." Surely a journal which has the utmost confidence and respect of its readers is a good medium in which to advertise.

Mr. Root:—I will now say a few things for GLEANINGS. I would not lose one copy of the journal for a dozen times the subscription price. GLEANINGS has helped me in the past; is helping me at the present, and I hope it will continue to do so in the future. I appreciate every thing that appears in its columns. GLEANINGS, in my mind, is the bee-keeper's safeguard.
ALFRED STRUCK.

Webster, N. Y., July 9.

Your paper is indeed a treasure; every leaf is well worth reading. I would not like to be without it now. Shall do my best to get you other readers. Your strain seems to do very well here. I have them crossed with queens from Italy, and the frames of brood are a treat to see, as level as a board, and brood right up to top-bar.
HERBERT POTTS.

Dutton, Preston Brook, England.

Seasonable Goods!

Non-drip Cases

The kind we call "Root Quality"—none as good.

Glass and Tin Packages

for extracted honey. A neat package means a fancy price.

Honey-extractors

The Cowan No. 15 will give you years of honest service. You need one.

We will have an exhibit of Root's goods at the Michigan State Fair, August 30 to September 7. We will be pleased to have you call on us, and make yourselves known. Bee and Honey Department is under south end of Grand-stand. Bee-keepers' day is Tuesday, September 4.

We Have the
Largest Stock of Bee-supplies in Michigan
and all **ROOT QUALITY**

M. H. Hunt & Son, Bell Branch, Michigan
Wayne County

CAUSE

Reading
Gleanings
and
practicing
the plans
given
for the
last
four
months
has
caused an
effect by
increasing
the amount
of honey
produced
by each
colony.

The
A. I. ROOT
Company

EFFECT

Orders
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A large
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on
hand
at
Syracuse,
New
York.



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Marion Co., Ill., July 13, 1905

E. E. MCCOLM.

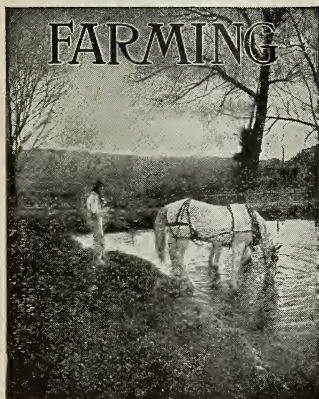
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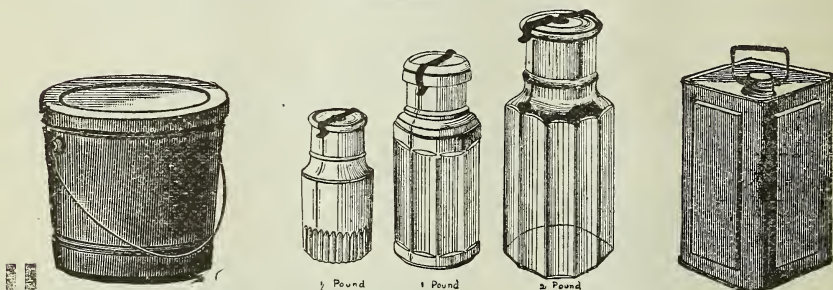
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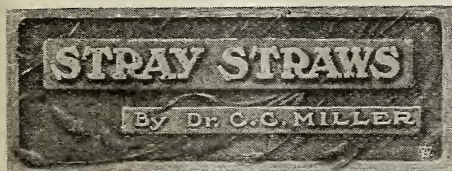


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AUG. 15, 1906.

No 15



ON THE ROADSIDE on the way to town I cut a stock of sweet clover that measured 8 feet lacking an inch.

EDITOR HUTCHINSON took his bees out of the cellar in the night, and had a bad case of mixing. He thinks there is less mixing with very small entrances.

ANOTHER REASON, not given by Mrs. Comstock, why women should keep bees is that some of them may write such delightful articles as that one on women and bees, p. 995.

"A HEAVY FLOW from *any* source will *always* check and sometimes cure either black or foul brood," page 988. You are entirely right in that, Mr. Editor—a point not generally understood in this country as it is in Europe.

WHILE ALL may be true that J. A. Green says, page 992, it should not be forgotten that a difference might be expected between this and the older countries in the fact that they have had foul brood longer, and so their bees are more nearly immune.

"THE UNBOUND zinc boards will probably sag on the brood-frames below," page 1012. True; but some lay a $\frac{1}{4}$ -inch strip across the frames at the middle, and that takes away the sag. [Thanks for the suggestion. I knew this was being done, but never thought to speak of it.—ED.]

SOME GOOD TALK by J. A. Green, p. 992, about emptying supers. But isn't it a little hard on the back to put his super on the

floor? We seldom have a case that needs the weight of the feet; but when a specially hard case comes we sit (sometimes stand) upon it while on the table.

J. A. GREEN, give me your hand. You have struck it exactly, page 991. "Let government take possession of all bee-territory as something separate from the land, and lease or sell it by itself." If a bee-keeper is willing to pay for it, why should he not be as secure in his right as a cattle-raiser?

PROF. H. A. SURFACE, who is closely watching the alfalfa-in-the-East matter, writes, "It is my opinion that it yields honey only when the season is dry, and when it is permitted to grow until the proper time . . . I note that one of our railroads has sowed it extensively along the banks of the road, apparently to cover the soil and hold it . . . I must admit that it has not been an important honey-producing plant in this State, although the present outlook may be good for it."

C. H. HOWARD bought hives with perpendicular wiring, and found comb built clear down to the bottom-bar, but not with horizontal wiring. If he will inquire closely he may find that some special means was used, other than the wiring, to have the comb built down. I had some 3000 frames with perpendicular wiring, and the bees built to the bottom-bar no better than with the horizontal wiring. [I do not know to what you refer by "special means;" but I know this: That perpendicular wiring will permit of the foundation reaching from the top down to the bottom-bar; while with the horizontal this would not be possible without danger of buckling.—ED.]

A WATERING-PLACE for bees that I like very much has been used this season. Take a tub (I have used half of a barrel sawed in two); pour in water, and then all the cork chips or cork dust you can without having it dry on top. The bees alight on any part of

it, and work over it just as they would on damp ground, and never a bee is drowned. So far as I have tried it, it works for feeding sugar syrup. [I believe your plan of watering bees would be excellent; but I should hesitate to recommend it for outdoor feeding of syrup unless that syrup were made very weak, say four parts of water to one of sugar. In that condition it would be liable to sour before it could all be taken up. Indeed, we have been caught that way this season already—not with this form of feeder, but with another form. The idea of using the weak syrup was to reduce the scramble of bees against each other—that is, make it so weak that bees do not like to fight for it.—Ed.]

"THE WIRE will be in the septum of the naturally built comb, provided the comb-guide, or narrow strip of foundation, is placed directly on the central line on the under side of the top-bar," p. 1013. Yes, the wire will be in the septum at the top; but whether it follows the wire down, depends. I think bees build natural comb always vertically. They will build upon foundation lying horizontally; but wires have nothing to do with deciding the place of the septum. Mr. Hurst's bees had the septum where the wire was, not because they followed the wire, but because the wire happened to be where they wanted to build the septum. Let him give them a perpendicular wire loose enough to be waving, or in any way out of the perpendicular, and see if the septum follows the wire. [In your remarks here you seem to have in mind *perpendicular* wiring, some of which may be of a wavy, irregular line. I had in mind *horizontal* wiring—drawn, not as taut as a fiddle-string, but tight enough to be in a perfectly straight line. Under such conditions my statement will be borne out, I think, by actual tests, except that the septum may vary a little at times, especially if the hive be not plumb, or if the frame hang a little out of the perpendicular.—Ed.]

"THE FACT that the plant (sweet clover) will not grow on cultivated lands" is an expression used on p. 989. I wish you would tell us just what you mean by that, Mr. Editor. I think sweet clover will grow on any cultivated land here, the only thing in the direction of your statement being that when grown on soft ground it is likely to be killed by heaving in the winter. [Perhaps the language is not as clear as it might be; yet take it literally and I stand by the statement. You seem to have gotten the impression that sweet clover would not grow on soft or tillable land. I simply meant to say that cultivation (i. e., cutting off the weeds), would keep sweet clover off from any good soil, therefore the plant would not grow on *cultivated* land; but as this brings up several interesting questions, A. I. R. desires to add a little at this point:

Sweet clover with us will grow on any kind of ground; but it is not often seen here in our cultivated fields, and I do not exactly know why; but it certainly seems to grow

better along the roadsides—yes, clear up to where the wagon-wheels pound it down and drag it in the dirt; and it grows luxuriantly on ground so poor that no other plant will grow—not even our hardiest and most pernicious weeds. I have had it sometimes get into our rich ground among the strawberries; and single plants sometimes grow there with wonderful luxuriance—so much so that in a little time it would take a strong man to pull them up by the roots. Then there is another thing: When we undertake to sow sweet-clover seed as we sow other clover seeds on good clover land, it seems to be a hard matter to get a stand. It grows spontaneously where one would least expect it; but when you try to grow it in a field like other clovers it does not seem to take to cultivation. If I am not mistaken, doctor, you have had some disappointment yourself in getting a field of sweet clover with a nice stand.—A. I. R.]

"IF YOU WILL refer back to a part of this discussion you will see that we were talking about stray virgins just returning from their mating-trips," etc., footnote, page 988. Scanning pages 825, 868, and 929, I find first mention of returning from mating-trips, p. 929, and you will pardon me for saying that I think you had no warrant for introducing it there. What we were talking about was your saying, page 825, "It is my impression that a young queen, when she enters the other hive for the purpose of getting out into the open air to mate, would in many cases supplant the old mother." No returning from a mating-trip in the case, you see. Now let's get the two separate cases plainly before us. First, what will happen if a virgin, either by design or accident, enters another hive with a laying queen? My opinion is that she will *always* be killed unless the laying queen be one which the bees desire to supersede. You seem to hold the same opinion, page 989, but give as a reason "that such virgins will be no match for a laying queen." There we are at outs again. When a virgin is old enough to be recognized as a rival, I think she is more than a match for a laying queen with her burden of eggs. Indeed, is not the virgin at this time at the height of her activity and strength? fresher, too, than a virgin just returning from the exertion of a mating-trip? I don't know, but I have a suspicion that the workers, not the laying queen, put the virgin out of commission.

Second, what happens when a virgin returning from her mating-trip enters the wrong hive? As a witness in the case my testimony is of little value beside yours, as you have had so much more to do with queen-rearing. If you say you *know* that a virgin entering the wrong hive on returning from her mating-trip almost always supplants the laying queen, I accept your testimony. But if you base your belief upon the reasoning you give, then I demur. You say, "She knows that, as soon as she gets into the hive, there's a laying queen there, and she makes for her, and usually comes off victorious." You are probably giving that as your sup-

position in the case. Allow me to give *my* supposition. If such a virgin should go coursing through one of my hives in search of the laying queen I should consider the workers very derelict if they did not promptly seize and imprison her without allowing her the chance of touching the old laying queen. Is it not true that a virgin returning from her mating-trip is sometimes roughly handled by her own bees, as testified by her lacerated wings? Would foreign bees be likely to treat her with greater respect? [The first reference which you give above, you see, relates to a case somewhat similar to that of a mating-queen returning from a flight—that is to say, conditions in both cases are practically the same. The interloper gets into the hive, not as an introduced virgin, but as a virgin ready for flight, accidentally, as it were, going into a hive with a laying queen. You must not take too literally the construction of the language. As to the other points, although I may be mistaken, I think you would have occasion to modify your opinions if you were to take a hand in rearing two or three thousand queens. I referred all of these points to our various queen-breeders, and got back practically the same answer; so I feel sure I am right in my premises, except that no one knows exactly what the young virgin *thinks*, or exactly what she does, when the hive is closed. I offered the theory to explain *why* an introduced virgin is rejected when an interloper is accepted; and let me say right here that a virgin a day old is a weak and feeble affair; and a laying queen is quite sure to recognize such an "affair" as a rival—dangerous, not for what she is *then*, but for what she *may* be.—Ed.]

A wave of warm humanity
Lifts, with its sweet fraternity,
Godward, and all is well.

FREDERICK D. WEBLEY, M. D.

Santa Rosa, Cal.

The above lines were sent me by the author, together with a photo representing the total destruction of Santa Rosa at the time San Francisco was destroyed. Dr. Webley suffered the loss of all he had, and yet seems to be in no way depressed by the terrible ordeal to which he has been subjected. Another friend in California says of that State, "With all thy faults I love thee still;" but he adds laconically, "She won't keep still."



I make the following extract from the *Agricultural Gazette*, of New South Wales, Australia, concerning honey in England. It is so comprehensive in its nature that it can not fail to be of interest to the honey-producers of this country:

The Acting Agent General for New South Wales, in London, reports that the principal sources of supply for imported honey into the British market are Jamaica, California, and Chili. The average importations annually amount to about 1000 tons, of which about 530 tons come from Chili, and the rest in small lots from various sources. A few years back Chili contributed a very much greater proportion of the trade; and in 1901, which was marked by the greatest importation of honey for many years, Chili supplied 586 tons of the total of 1535 tons, Jamaica being next with 450 tons. London is the principal distributing center for Great Britain, the bulk of imports being consumed at home, though shipments are also made to all parts of the Continent. The chief characteristics necessary to render honey suitable for the British market are flavor, color, and clearness, flavor being the most important. The best honey should be sweet and clean in flavor, and "pale set clear" in appearance.

Amber honey is the next in grade, and brown honey is regarded as inferior. Honey is used in England both for manufacturing purposes and as a table delicacy. California is the chief source of supply (outside Great Britain itself) for table honey, and it comes packed in cases, which are considered more suitable for this class of trade. Jamaica honey is chiefly used for manufacturing purposes, and for this branch the most suitable packages are kegs and barrels containing 2 to 3 cwt. each. A certain proportion of Jamaica honey also comes packed in cases for table use. Australian is used, generally speaking, only for certain manufacturing purposes, on account of the peculiarity of flavor.

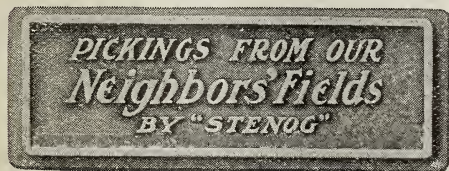
The present prices of honey (Jan. 1, 1906) are: Finest, 20s. to 25s. (\$4.85 to \$6.00) per cwt.; ordinary, 14s. to 18s. The higher range of prices would be for the finest table honey, and the lower range would represent the price of the ordinary commercial article. These prices are considered moderate, and somewhat below the average. Much of the Jamaica honey is sold at 17s. to 18s. per cwt. Australian is regarded by the principal dealers here as being worth 5s. less per cwt. than Jamaica; and under these circumstances there does not appear to be much scope for our honey in Great Britain unless it can be sent over at a cost of not more than 12s. (\$2.90) per cwt., including all charges.

Regarding the prejudice against Australian honey, this feeling is apparently a deep-rooted one, and it is quite possible that it is based on the experience of mixed or inferior samples which have reached England. If some of the excellent "box" honey produced in many parts of New South Wales could be sent here, the bad impression might be removed.



HONEY LEMONADE.

For those who appreciate the taste of honey, and who enjoy cool drinks in hot weather, the following may be of interest. Prepare lemonade in the usual way, but use



AFTER THE EARTHQUAKE A FIRE.—II. KINGS 19:12.

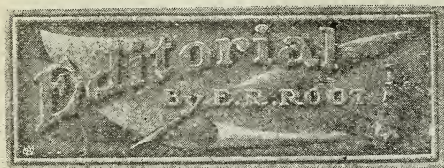
It is worth all we have suffered to have such a spirit called out. May we never go back to the old.—*San Francisco Examiner*.

What of the night, brave captain—
What of the night? Oh tell,
If thou dost know,
By the tides that flow,
That the morn with its ruin dire,
And the night with its doom of fire,
Have passed, and all is well.

This of the night, brave comrade,
This of the night: The spell
Of greed, of gold,
And of self-love old,
Dies, and a spirit fraternal
Draws with a love eternal—
God lives, and all is well.

The hours are pregnant, comrade,
When high noon strikes. The swell
Of the coming tide,
As the ocean wide

good thick extracted honey instead of sugar. A delightful new flavor is obtained that is quite different from the taste of honey or of ordinary lemonade.



THE *American Bee Journal* has put in some new department headings. The "Old Reliable" seems to be able more than to hold its own.

THE FERRIS HIVE-LIFTING DEVICE.

OWING to a large number of engravings to go with it, we were compelled to leave out of this issue the article by A. K. Ferris detailing his system of producing honey. It will show a set of machines, or lifting-derricks, not only for handling the hives but for lifting heavy supers off from the brood-nest temporarily while the latter is being examined. In short, the frailest kind of woman can use this apparatus, handling hundreds of pounds weight with very little effort. Two other lifting-devices will be illustrated and described as well.

THE PROBLEM OF HIRED HELP IN THE APIARY.

THE editor of the *Review*, in commenting on the difficulty of getting help, stated that at the last meeting of the Michigan Association some one criticised the methods of Mr. E. D. Townsend. The latter admitted that other methods might be better for the man who is doing his own work, but that he, Mr. Townsend, was developing a system that *could be turned over to ordinary hired help.*

There is a whole lot of truth in this. Some people are skillful workers, but have no ability to instruct others to do what they can do successfully. The great difference between success and failure lies in the ability to handle help and make that help do your work, or at least parts of it, as well as you can do it yourself.

AN EDITOR IN THE FIELD.

It will be remembered that Editor Hutchinson, in connection with his brother Elmer, is operating several out-yards in the raspberry regions of Northern Michigan. Some of the editorials of late in the *Review*, I imagine, are written outdoors on a hive-cover, the fingers, perhaps, daubed up with propolis. Somehow there is a crispness about editorial buzzings from the field. At all events, the *Review* is redolent nowadays with some interesting experiences of the editor. His ar-

ticles telling of his experience in wintering bees and moving them by train and by wagon up in Northern Michigan make very interesting reading.

Mr. Hutchinson was forced to go outdoors on account of his health. Perhaps the misfortune of ill health is, after all, a blessing in disguise. GLEANINGS sincerely hopes that Bro. H. will not only get a good reserve of health, but lots of honey; and last, but not least, some practical suggestions for his brother bee-keepers who are struggling with the same problem of "long-range" bee-keeping.

QUEEN-CAGE CANDY; IMPORTANT FOR EVERY QUEEN-BREEDER.

In selecting an extracted honey to use for making a queen-cage candy, it is *very* important that the source of that honey be known. If unknown it should be thoroughly boiled to disinfect it from any *possible* germs of black or foul brood. One boiling may not be sufficient. Boil it one hour and let it stand two or three days, and then boil again another hour. This is better than boiling three hours all at one time.

One can readily see, if he will reflect a moment, how foul brood *might* be spread through the agency of bee-candy. Most of the mailing-cages now are self-introducing by the bees eating out the candy and finally releasing the queen. Suppose this candy is contaminated with germs of black or foul brood. The chances are that the colony to which this queen was introduced would soon show symptoms of disease, even though the colony or bee-yard whence this queen came might be perfectly healthy.

This matter is so important that I would respectfully suggest that our apicultural exchanges bring the matter before their readers. In the mean time the purchaser of the queens, if he wishes to be on the safe side, taking no risk, may recage the queen received in the mails, introducing her by means of bee-candy made of honey out of his own yard.

THE VALUE OF A ROBBER-TRAP.

ABOUT the best way to stop robbing, when it first gets started, is to catch them all in a robber-trap. We will say here is a colony or nucleus that is being robbed. Take the hive away and put it down cellar or in a building temporarily. Put in place of this hive another empty one containing a comb of honey. Over the entrance on the inside there should be two or three bee-escapes that will let bees enter but not escape back into the open air. Keep this robber-trap on the stand until all flying robbers have disappeared in the "trap;" then take trap and all into the cellar and keep them there for a week, or, better still, move the trouble-makers to an out-yard two miles away from the home bees where the pilfering took place. The trap catches all the robbers, and prevents them from being an annoyance for days afterward. Not only that, it prevents them also from stirring up other bees and

getting them into the fracas. When a bad case of robbing is started, it involves only a comparatively small number of bees. If these are allowed to go back to their homes they will bring back a horde of others, and will thus keep the apiary in an uproar for days and weeks. Whenever there happens to be the least bit of sweet exposed these chronic thieves will rush out and start a furor inside of a very few minutes. But trap them, or, as suggested in our last issue, kill them all together, and then you will get at the very source of the trouble.

Robbing is like a case of smallpox, diphtheria, or, if you please, foul or black brood. It should be stopped at the very beginning. There is nothing in the world that will play worse mischief with a queen-rearing yard than pilfering bees prying into every entrance.

One might suppose that it would be simply impossible to trap out all the robbers. You will be surprised to find how few of them, compared with the whole number of bees in the yard, are actually engaged in the business of stealing. Even if we had to kill them all after trapping, the loss would not be very great; but, happily, they can be saved, and used in an out-yard; or, may be, let out in the home yard after they have been confined a week in a cool dark place, where they will have a chance to repent of their sins, or to be more exact, perhaps, forget all about their past escapade.

BEE AND HONEY EXHIBITS AT OUR COUNTY FAIRS: HOW TO DEVELOP A HOME MARKET BY MEANS OF LIVE-BEE SHOWS.

I PROMISED last fall that I would remind our readers of the importance of preparing bee and honey exhibits at the coming county fairs. Arrange right now for space. Instead of going inside of the fairhouse I would advise putting up a temporary booth outdoors, or rent a tent from some camper who has just returned from his vacation. Prepare a nice honey exhibit, showing honey in its different forms.

To draw a crowd, get inside a wire-cloth cage, one big enough to hold yourself and a hive of bees. While an attendant is prepared to make sales, you or some one else should get into the cage, bareheaded, bareheaded, without coat or vest, and shake the bees into a big dishpan. Now shake the pan until the bees are thoroughly demoralized, rolling them over and over. In this condition you can do almost any thing with them, providing you do not pinch them. Gently pass the two hands under the ball of bees, moving them very slowly until you have your hands full, then hold them before the astonished crowd. Crowds? oh, yes! the people will fairly swarm around your exhibit. When you get the crowd, *then* is the time to give a nice little talk about bees and honey. While you are talking your attendant should show an extractor as well as other appliances. Tell the people who you are, where your bee-yards are located, and hand out honey-leaflets and

blank postal cards with your name and address; explain that honey is a wholesome sweet, much safer and better than ordinary cane sugar, and far better than most candy. Answer all the questions the crowd may put; and if you do not sell honey, and lots of it, *it will be your own fault.*

Your sales for two or three days, while the fair is in progress, will more than pay expenses, and will give you a permanent advertisement that may enable you to dispose of your own crop right in your own locality at twice or possibly three times the price you would get by shipping it to the city. If the experience of others is duplicated, you may sell a great deal more than you produce.

In connection with your exhibit of bees you ought to have a couple of observatory hives. A one-frame nucleus with glass sides is better than a whole hive with glass sides, although we advise the use of both.

There should be a large placard out in front of the demonstrating-cage, stating that that hive of bees will be handled at such and such hours. Arrange the periods for bee demonstrations so as not to conflict with other things on the ground that may pull away your own crowd. Then remember to make your main demonstration just about the time people are going home, for *then* is the time they will buy.

THE NATIONAL PURE-FOOD LAW: WHAT IT WILL DO FOR THE BEE-KEEPER.

As our readers probably know by this time, we now have a national pure-food law which, in conjunction with the pure-food laws in over two-thirds of the States, is going to put the business of producing pure honey on a much better basis. The States that have such laws, especially where there are energetic and honest food commissioners, have stopped the practice of adulterating and misbranding to a very great extent; but so long as there was no *national* law the spurious food products were imported into Territories under the direct jurisdiction of Uncle Sam, and into States that had no laws. But now that we have a national pure-food law, the practice of mixing an inferior with a better article of food, or misbranding, will be very largely curtailed if not stopped altogether.

Our readers will remember that there was a concern in Kansas City that used to put out glass packages purporting to contain a pure article of liquid honey, but which, in fact, was almost pure glucose. The label bore the specious wording, "Kellogg's Pure White-clover Honey, Medina, Ohio." By this, you see the vender endeavored to borrow, or I had better say *steal*, the reputation of The A. I. Root Co. As a matter of fact there was no one putting up honey in glass or any other form at Medina but The A. I. Root Co. We threatened prosecution, but found it would be difficult to make out a case, as the concern had not actually used our name. But it came as near it as possible, and succeeded in sending out its products until well-meaning bee-keepers every

now and then would write us, asking if we were connected with the men or concern bearing the name Kellogg of Medina; and if so, why we allowed such a miserable concoction as Kellogg's honey to issue from this town.

But now under the pure-food law the so-called "Kellogg" will not be allowed to do an interstate business, selling any form of adulterated or misbranded article, no matter whether it be honey or something else.

There were various other concerns putting up what purported to be honey, even in States that had rigid pure-food laws. Now they will have to quit the business unless they reside in a State where there is no pure-food law, in which case they will have to confine their sales entirely within the borders of their State. If any of their product goes into some other State, however, trouble is likely to arise.

Unfortunately, some States have pure-food laws that are not in harmony with the national law; and the legislatures of the various States will be urged to make the necessary amendments so that it will be possible to sell nothing but the strictly pure article, or adulterated brand, for exactly what it is.

The Association of Retail Grocers is very much pleased over the new law. Their president has already expressed himself as believing that the law "will result in much purer food products than we have been accustomed to have for many years."

The effect of the law can not fail of doing great good ultimately to the general business of bee-keeping. Consumers have been so often disgusted with the nauseating products masquerading under the name of "honey" that it will be some time before they will be willing to buy freely even a pure article. Unfortunately a large percentage of the consumers at least will not know that a national pure-food law is in force; and they will be equally ignorant of the enactment of any statute within their own State affecting the manufacture and sale of various foods.

Every bee-keeper should make it his business to ascertain if his State has a pure-food law, and, if so, whether it is enforced. If he finds he has protection, both from his own State as well as from the national government, let him make a strong handle of the fact that the consumer may now buy his honey without fear of adulteration.

The new national pure-food law will now put us in a position where we can say there is no manufactured comb honey. Even if it were possible to make it, Uncle Sam would put a stop to its manufacture because he would prohibit the maker from doing an interstate business.

ANOTHER USE FOR BEE-STINGS.

A FEW days ago a Mr. Jones who keeps bees near Penfield, Lorain Co., Ohio, was telling a little crowd of a queer customer he had for bees a short time ago. The man wanted a colony of bees. He said he wanted the worst stingers they had in the yard.

Now, Mr. Jones had a hive of vicious hybrids that he wanted to get rid of, and they soon made a bargain. When it was completed, his singular customer proceeded to take off his hat, coat, roll up his sleeves, unbutton his collar, turn it back, then jerked the cover off the hive, gave it a kick, and let the bees sting him. In explanation he told a story that so impressed me that Mr. Jones and I called on the person in question—an old gentleman named W. S. Langdon, of the same place, Penfield. Mr. Langdon, who is a steady old farmer, said something as follows:

"For several years I had been trying first one doctor and then another to see if they could cure me of a troublesome form of eczema; but doctor after doctor seemed to have no success in getting rid of the disease. Finally one day a swarm of bees lit on an apple-tree near my home, and in hiving it I got severely stung on the arms, face, and neck. There were so many of the stings that I turned spotted all over, and came near fainting; but in about half an hour I began to get over the effect, and the eczema left me right off from that moment, and I did not have any more of it for over a year. At the end of the year it came back again, and began to be so troublesome I went to Mr. Jones and bought a swarm of bees as he has told you."

I then asked him if he had mentioned the matter to any of the doctors, and he replied:

"Yes, I did, and our family physician said right away that one of their medical journals contained an account of a woman who was cured of eczema in much the same way."

"But, Mr. Langdon, have the bee-stings proved to be a remedy since you bought that stinging colony of Mr. Jones?"

"Yes, in a measure; but the cure has not been as complete as in the first case, because I can not manage to get the bees to sting me as they did then."

It would look a little, friends, as if the bees had tired of the fun as soon as they found out what our good friend bought them and kept them for. I have given you the facts as I could gather them.

While on this subject I might mention that, at the Philadelphia field day, Dr. Frank McGinn came on the stand before the audience, and Mr. Selser explained that Mr. M. had been for years obliged to go about on crutches on account of rheumatism. Through the use of bee-stings he had discarded crutches, and was able to get around pretty well without them. Mr. Selser said he would now come before the audience and show them how he "took his medicine." He bared his arm nearly to the elbow, then picked bees off from a comb held by an attendant, and made them sting his bare arm fifty times. Mr. Selser said if any one doubted about taking fifty stings he could come forward and see the stings still remaining in the arm. When somebody asked if it was not a pretty tough remedy he replied that it was not as tough, and did not last as long as the rheumatism did.—A. I. R.

Conversations with Doolittle

WHERE KEEP HONEY: WHAT MAKES COMB HONEY SWEAT OR LEAK?

"This is S. E. Brown; and I believe this is Mr. Doolittle, is it not?"

"Yes, this is Doolittle. Well named."

"Well, by your size, and what I read of you, I have my doubts in the matter of being well named."

"Yes, well named. Big man—do-little. But what can I do for you this hot day, Mr. Brown?"

"It is hot, surely."

"Yes, our August days are often very hot, and this is one of them. Let us sit down here in the shade of this basswood-tree. Father set out this tree when I was a boy, and nothing has pleased me in the tree line better than this. It is the very first of all the basswood-trees to bloom, so that I know to a day when the basswood bloom opens; and right over there is one he set later, after I was married, and, strange to say, that is the very latest to bloom, so that I have right here, within a stone's throw, the knowledge of the limit of the basswood bloom."

"That is quite an item, surely. But how much is the difference in the time of blooming?"

"The earliest, or the tree we are sitting under, opens from the first day of July to the 15th, according to the season. This year it was the 8th; and it is generally from the 5th to the 10th. The 1st and the 15th are the extremes—the first for a very early season, and the last for a very backward one. Then the late-blooming tree commences to blossom about ten days after the first bloom opens on this early tree."

"I see. So you have ten days of basswood bloom."

"Not just that way. It is ten days from the time the first opens to the time of the opening of the latest. Then each tree is in bloom from six to ten days, just in accord with the amount of hot or cool weather while they are in bloom, so that we have from 16 to 20 days of basswood bloom here on the lowlands; and this, with a continuation up to and on the high hills to the south, has given me in certain best years as high as 28 days of continuous flow from basswood."

"My! that almost takes my breath away."

"And so it did *Do-little's*, that year when each colony gave an average of 166 pounds of section honey. But no breath was taken away this year, for our almost continuous rains, together with mostly east air, which is against the secretion of nectar, allowed the basswood season to come to an end with almost no honey in sight from that source.

But I judge you did not come to talk about basswood honey."

"That is right. I want to know where you keep your honey after it is off the hives. My clover honey is looking quite badly. Why does honey ooze out of the comb after it is taken from the hive and stored away?"

"This is a question which is often asked, and one that confronts every comb-honey producer sooner or later."

"I think it is because the bees did not thoroughly ripen this honey before I took it from the hives. Am I right?"

"Let us talk the matter over a little and see. Whether ripened or not, the honey can ooze from the cells only after being capped, on account of a larger bulk of liquid being in the cell afterward than there was at the time the bees sealed the cell. Do you agree?"

"I guess I shall have to."

"This can come from only one source, which is always brought about by either cool, damp weather, or a non-circulation of air, or both. Honey swells only as it becomes damp, and the first that will be seen of that dampness will be in the unsealed cells which have honey in them where the honey will become so thin that it will stand out beyond the cells, or, in other words, the cells will be heaping full."

"I guess you are getting at the matter rightly, for that was just what I first noticed."

"Yes; and if the dampness remains, the cappings of the sealed honey will soon become transparent, while the honey from those unsealed cells will commence to run out, daubing every thing below it, and, eventually, if the cause is not removed, the cappings to the cells will burst, and the whole will become a sickening, souring mass."

"Well, I guess you are nearly right; for quite a little of mine has begun to ooze from the unsealed cells, while the combs where they are sealed is taking on a watery appearance."

"Where do you keep your honey?"

"In an unused room on the north side of the house, where it would be kept as cool as possible."

"About as I expected. When I first commenced to keep bees I stored my honey in just such a room, thinking that was just the place for it, so you need not think that you have been making a mistake others have not."

"How did you find out what the trouble was?"

"Mrs. D. wished to use that room for household purposes, so I had to abandon it and take a room upstairs for the honey. As this upstairs room was fearfully hot I feared the result; but when I came to crate the honey for market, lo and behold! I found that all this sweating and souring had not taken effect that year, for the honey was so thick, even in the unsealed cells about the edges of the sections, that it would not run out—no, not even when the sections were laid down flat on their faces. I took the hint, and ever

since then my honey has been stored in the hottest room possible."

"But you do not lug all your honey upstairs, do you?"

"No. But I know of several bee-keepers who do, and of some who have elevators for the purpose, which saves this lugging."

"How do you manage yours?"

"Soon after finding out that honey must be kept in a warm room to keep perfect, I built me a shop and honey-house combined, locating the room for comb honey in the southwest corner, and painting the outside, or the south and west sides to this room (on the outside) a dark color, so that the rays of the sun would be absorbed; and when I had one or more tons of honey in this room the heat absorbed by the honey during the day would carry or hold over night, so that I had a continuous temperature of from 75 to 95 degrees, day and night for weeks, or till the honey was crated and marketed."

"Do you keep your honey there now?"

"No. When I sold out I had to build a honey-room again, so I put a lean-to on the south side of the barn. Want to see it?"

"Yes, please."

"Well, here we are."

"Whew! but this is awfully hot."

"Somewhat warmer than the shade of the old basswood, I admit."

"How hot is it?"

"A glance at the thermometer there will tell you."

"Just an even 100, as I live."

"Yes, this room often goes up to 100 degrees, as the whole outside, roof and all, is painted with red paint, which makes it fully as hot as if black were used."

"But don't the honey ever melt down here?"

"Never, so far."

"And does the honey keep good here?"

"Never had any thing equal it."

"How much did such a lean-to cost?"

"The material cost about \$55.00; but as half of it is for my automobile-room, as you will notice, \$30 to \$35 should cover the expense of the material for a honey-room large enough for the honey from 50 to 100 colonies."

"Surely, there is your auto. And that picture in the August 1st GLEANINGS is perfect too. And you can run it, with its load of honey, right in here, with the honey right in the honey-room, just where you want it. My! but that's handy!"

"Yes; and when it is so muddy that I can not use the auto I drive the horse and wagon right in here on the barn floor, when it comes through this door almost as easily as it unloads from the auto."

"That's so. And in no case do you have to carry the supers of honey more than from five to eight feet. But, say! the temperature in this barn almost feels cold after coming out of that honey-room. I had never thought of a lean-to for a honey-room; and I have got a barn situated similar to this, and I can fix things all right. A lean-to I must have, and I will have one for my honey.

No more leaky, watery, sour honey on my plate."

"All right. But let me just whisper that you put your sleepers and abutments under your floor thick enough and strong enough to sustain the weight of honey you may chance to have should a good year come when you pile the room full."



ANTS THE GREATEST ENEMY OF BEES.

Especially those in the Tropics; How to Combat Them.

BY W. K. MORRISON.

Your correspondent in South Africa who wants to know how to protect his bees against the attacks of ants asks for the solution of a very important question to nearly all tropical bee-masters. Those who have never lived or traveled much in the tropics can have no adequate conception of the extraordinary numbers of tropical ants and their wonderful abilities. When I tell my friends that some species of ants will tunnel under a river as wide as the Thames at London Bridge they think I am guilty of telling a traveler's tale; but there is the best ground for so stating. It is pretty hard to put a limit to their abilities and extraordinary energy and industry.

Ants are said to be the masters of South America, and with truth. Some are relentless enemies of bees—I mean those with carnivorous instincts chiefly, while some like honey as a food. There may be 2000 different species of ants in South America, and it is almost needless to add that practically nothing is known about them, the subject being so vast that few or none care to attack the problem. South America is immensely rich in ants, bees, and wasps, next to man himself the most highly organized of all animals. Down there the ants are everywhere. They have their nests in the loftiest trees, and in tunnels far underneath the surface of the earth; and they tackle any thing and every thing day and night.

I do not think that any other part of the world can compare with South America in this respect; but South Africa has a goodly share. Years ago I read such authorities as Huber, Forel, Moggridge, and McCook; but their observations apply principally to European and North American species; and what the natives say can not always be relied on. So it is, if any one is very much bothered with these enemies he will have to depend

very much on his own observations excepting what few hints he may get here and there.

I read up the tropical authorities on ants such as Bates, Wallace, and Bell; and, with the exception of the latter, I could glean nothing from them in regard to the habits of ants; and if we have to fight ants we must understand their ways.

Mr. O. O. Poppleton, of Florida, has recently graphically described the actions of an ant common to his State, which makes desperate assaults on hive bees. Strange to relate, the same species is common to South America, and is there a relentless and undying enemy of bees. The worst of it is, it does most of its ravaging at night. It is also nomadic in its habits—a sort of Arab among the ants. It is, therefore, what entomologists term an *Eciton* or driver ant. If it had an abidingplace as other ants have we could destroy its home; but it has a nasty habit of encamping handy for the struggle. It is no coward or sluggard. It will just as readily attack a strong colony as a weak one; and I do not hesitate to say that in some parts they are numerous enough to destroy all the colonies at the Home of the Honey-bees within three days. It doesn't make any difference how many the bees may kill, more ants jump to the attack till superior numbers gain the day. The Russians could get a good deal of knowledge from them preparatory to the next war. Before I understood them very

frogs (crapeaus) came and played with the water till it all splashed out—this in the night too. An mals, too, thought I placed it there for their benefit.

Gradually I discovered the only way to keep bees in hot countries was to construct an ant-proof shed. I give an illustration of a shed the result of my observations.

The ant I refer to is not the only one by any means which bee-keepers have to dread.

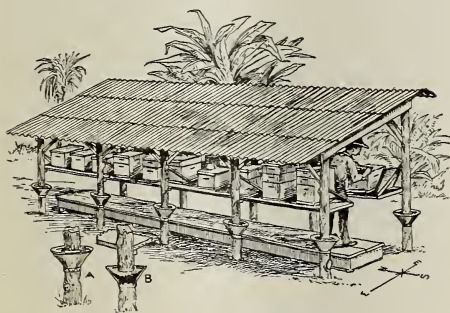
Some of these may be circumvented by destroying their nests—and there are nests 100 feet around or so, and perhaps 6 feet deep in the earth. In Trinidad and Eastern Venezuela the “parasol” ant is very destructive to plantations, particularly to cacao (chocolate). The planters resort to various devices to destroy the nests. Some puddle the whole nest, but that is expensive, costing something like ten dollars a nest. Bisulphide of carbon and gasoline are very effectively used, but are disguised under fanciful names and sold at a large profit.

Picric acid, nitroglycerine, and gunpowder can also be used, and crude petroleum is one of the best remedies where one can get it cheaply.

The “parasol” is a leaf-cutting ant, and bears a great resemblance to the ant just described; in fact, I can't see the difference; but in habits it is entirely different. The parasol ant builds an immense nest, works in daytime, eats vegetation, and is not a nomad. There are many ants which may be combated by the same means as the parasol ant—that is, by using bisulphide of carbon or gasoline. The A B C says use a crowbar to make a hole, and then put in the bisulphide; but that is a poor way. Do nothing to clog up the passages in the nest; drop some carbon into each hole, and then cover up the nest with a piece of canvas. The gas which is generated is heavier than air, and will sink to the remotest corners of the nest, killing all life in its course.

Where ants' nests are near the home, something may be done by digging out the nest a little at a time, allowing the chickens to eat the larvæ (ant eggs). But there is nothing like a shed properly constructed.

Construct a good big tin cup around each post, and fill the same half full with tar. Water may be used, but it is not a tenth as effective as tar; besides, the tar preserves the post. The illustrations will show just how to do this. Water may be allowed to accumulate in the cups on top of the tar. It is safe to say no insect or other animal will touch the same. Ants hate tar for two reasons—its smell is vile, and it sticks their feet. The stingless bees plaster a sort of bird-lime around their entrance-hole so sticky no ant cares to negotiate. The hives should be very simple—no gable roofs, no porticoes, no quilts, nothing that will form a refuge for ants. Closed-end frames with a space at the end will not answer, and don't pay good money for division-boards or followers, for some species of ants will actually make their home inside the hive and keep robbing and teasing the bees all the while. And there is nothing



MORRISON'S ANT-PROOF BEE-SHED FOR THE TROPICS.

well I used to nail up my hives every evening and open them in the morning; but sometimes they managed to gain an entrance somehow, and then a battle would ensue. The bees would *holler* something like this—"Help! help! help! blue murder! bee-keeper, wake up!" and I got so used to it that at the first onslaught the shouts of the bees would wake me right up. Then I would get a light and discover the "leak," nail up the hive, and retire to rest. In daytime they would encamp in *swarms* underneath the hives, patiently awaiting their opportunity. This kind of thing gives a man an eerie feeling of insecurity, especially when he is the only owner of bees for many leagues around. Why didn't I put the legs of the hives in cans of water? I did, but to little purpose. The

like a shed for bees in hot countries, both for the comfort of the apiarist and the bees.

To prevent the loss of queens, clipping should be resorted to, and perforated zinc honey-boards should be used if extracted honey is being run for. It is a mistake to project the eaves of the shed far over the hives. This causes too much shade, and the bees can not see the entrance at eventide.

If the climate is damp I prefer the morning sun to strike one row of hives and the setting sun the other row. The bees work better—far better; and the apiarist himself can do more work than if out in the open. In the little matter of stings there will be about three-fourths less. To prevent fire the roof should be of iron or tin.

ANTS IN PENNSYLVANIA.

How to Destroy them; their Habits.

BY D. E. BEST.

Mr. McCready's ant-fight with bees, page 148, is nothing new to me. Mr. Poppleton's reply is very correct, only I use coal oil instead of hot water to kill them, as the remaining odor of the oil is very efficacious in keeping away those that are not killed. In your footnote, Mr. Editor, I see you call the above a very interesting contribution, hence I will give you some of my trials.

I have to fight with those big half-inch ants and some smaller ones, say about one-fourth inch long, almost every summer, and they are very troublesome wherever they once take hold. They kill a bee almost as quick as a watch-tick—that is, if they get it the right way. Sometimes the dead bees have the same appearance they do when drowned in fat. Mr. Poppleton says a great many of the ants will also be killed; but how the bees do this is a mystery to me. Why can he not see the bees sting the ant? I think I have seen that. He also says chickens are fond of ants and their eggs. I know they are; and whenever you can not laugh, but would like to, simply take six or more young chicks and put them in the middle of an ant-nest; then I am sure you can laugh, and heartily too, as the youngsters will learn their dancing right there. They put in three and four and all kinds of steps.

I have one hive where the ants took possession three or four years ago, and I tell you I have to keep a close watch every summer else they will kill that colony of bees very soon. I once thought I had killed or driven away every ant and egg, and hence neglected to watch. Then one day I noticed the bees flew no more. I then went close to the hive to see the cause. I finally saw quite a lot of those big ants in the entrance, and they simply kept away the field bees. Whenever one or more bees came near, ants stood ready on their hind legs, and they almost jumped up to catch the bee. Bees inside had to stay inside else they had to enter a big fire, which would have resulted in sure death. Then I went for my "gun," which

meant coal oil, and gave the outside ants a dose. I then opened the hive and took out every frame and comb, and by so doing I found that ants had filled about half way up three or four of the outside combs with chaff from the outside body. Now, how many eggs, about the same size as the ants, they had in that chaff I can not say; but it was terrible. So again I gave that hive a good overhauling, and thought I had surely won the battle; but later on I found still more of the pests. Let me tell you that the same nuisance will also kill trees; and whenever you plant vegetable seeds or plants in such ant-nests, that means an entire failure, for they are sure to ruin or kill. I remember that, some ten or twelve years ago, I had cabbage in the same field for several years, and there was a certain spot where the plants always suffered more or less. On examination I found a big ant-nest in the same spot, and, if I mistake not, the same nest is there still, although the field is now in clover.

Best's, Pa.

THE LITTLE RED ANTS; HOW TO PREVENT THEM FROM BOTHERING BEES.

In regard to those red ants you spoke of on page 148, Feb. 1, we have them here. They live in trees, stumps, etc. They are a nuisance around a hive. We also have a little ant that only tantalizes the bees. The remedy I use is this: I have all my hives on stands, ten or twelve on a stand, supported by four posts, or legs. I get some very coarse flannel, or old horse-blankets, tear in strips about six inches wide, wrap them tightly around the posts, but leaving the bottom edge of the strip loose so that it flares out somewhat from the post. This hairy woolen goods makes their headway impossible, for they will not go up inside the cloth and then down the cloth and up again on the outside. Pour a little kerosene on this, and the ants will never bother the bees. We use something similar on the fruit-trees, etc.

ED. J. COLE.

St. Louis, Mo.

THE WEST SPIRAL QUEEN-CELL PROTECTOR.

Some of the Different Uses to which they Can be Put; Queen-nursery.

BY N. D. WEST.

In forming a queen-nursery with the West spiral wire cage, make a cell-bar, saw out some slats $\frac{1}{4}$ inch thick by $1\frac{1}{2}$ wide, and $\frac{1}{4}$ inch longer than the inside measure of the length of your brood-frame. In these slats bore $\frac{1}{4}$ -inch holes, or a little larger if the larger cages are used. Bore the holes as close to each other as you can and not split the slat, for a cell or a cage bar (see Fig. 1).

Now go and get as many queen-cells as you have holes in the cell-bar. Place the queen-cells in the spiral queen-cell protector;

then put the tin covers over the cells (Fig. 2), and put the cell-protector into the large end of the long spiral cage as you would put a cork into a bottle for a stopper. Turn the cell-protector around two or three times and screw it fast to the cage; then put a cage thus prepared in each hole in the cell-bar.

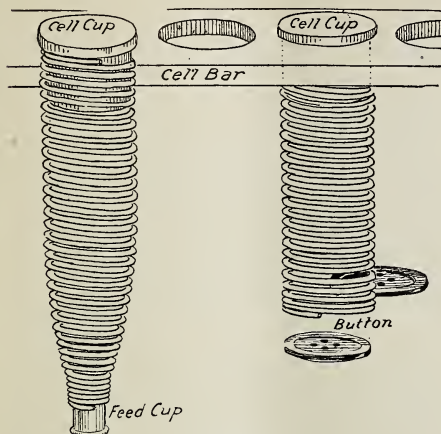


FIG. 1.

This cell-bar may then be fitted into an empty brood-frame about two inches below the top-bar of the frame. I like it better to have the top-bar of the frame removed all but the ends to hang in the rabbets of the hive. Prepare the brood-frame with notches made in the frame ends to receive the cell-bar.

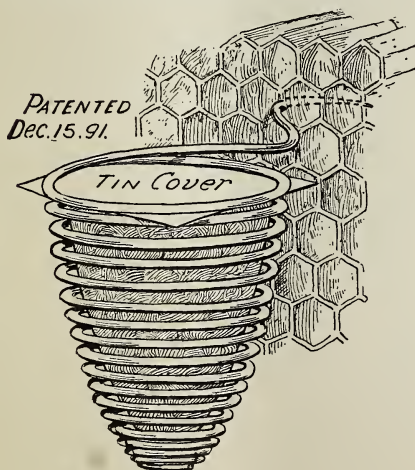


FIG. 2.

When wooden cell cups are used, having the cells made on them and all nicely capped over, you can use the cage in the same way in the cell-bar. Make a cell-bar if you choose, the same length as the top-bar of your brood-frame; and by taking out one brood-frame lay the cell-bar containing the

caged cells loosely in the place of the frame, and put a quilt over all until the queens hatch. The flange on the cell cup will keep the cages from falling through the holes of the cell-bar. However, I hatch the most of my queen-cells by hanging the united cell-protector and cage by their spurs on one side of a brood-comb. I prefer to hatch them in hives that have no loose queens. The bees will then feed and care for the young queens, when they are hatched, through the coils of the cage.

HARD STORE CANDY VALUABLE FOR INTRODUCING QUEENS.

For an introducing-cage I know of nothing so convenient as the spiral cage. I introduce nearly all of my queens with it, and a piece of hard store candy for a cage-stopper. Queens that have not been sent through the mail I introduce at one operation—that is, I remove the condemned queen, and at once put in a new caged queen before closing the hive if I have the queen to put in. I use a piece of hard store candy, $1\frac{1}{4}$ inches long or less (according to the length of time I want the queen confined in the cage). The candy is put in the large end of the cage, and then I place a nail or toothpick through the spiral below the candy (see Fig. 3), to keep the candy from falling down on the queen. The bees will eat the candy from all sides through the cage, and make the candy smaller in diameter. In an ordinary swarm a piece of candy $1\frac{1}{4}$ inches long will keep the queen confined 48 hours. If you raise the same length of piece of candy so that it will protrude $\frac{1}{2}$ inch or more above the cage, the bees will liberate the queen in less time, for they will eat away the candy much faster above the cage.

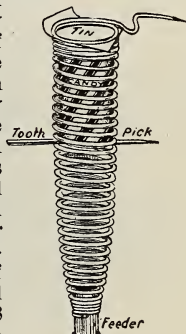


FIG. 3.

I introduce queens more frequently by hanging the cage by its spur on the side of a comb in some out-of-the-way place where there is room for it. When it is necessary, spread the combs apart a little to make room for the cage. I do sometimes lay the caged queen on top of the frames under the quilt or under the frames on the hive bottom. In all cases, place the cage so the candy will not fall out of the cage. Let the bees eat the candy. Do not open the hive for a week after the queen is liberated.

Many queens get killed by opening the hive too soon after the queen is liberated from the cage, which often frightens the new queen and causes her to scramble through and among the stranger bees excitedly, and for this cause many queens get balled and finally killed.

To use the spiral cage in the baby nuclei, the holes in the cover to receive the cage should be large enough for the cage to go in very loosely.

BEE-ESCAPES.

These long spiral cages are good bee-escapes. Many who are using them prefer them to all others, especially in handling comb honey. I use them altogether, and can

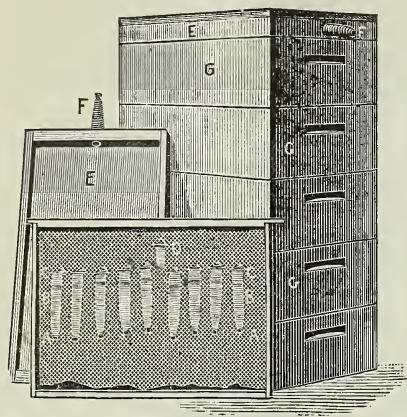


FIG. 4.

rid clumps of comb honey of their bees in less than half the time that I can with any other device that I know of. It is necessary to know how to use them (see Fig. 4).

CARING FOR OUR BEES.

A Practical Way to do it After they Have Swarmed; How to Work in Harmony with Nature.

BY E. W. ALEXANDER.

While many are trying to invent some unnatural complicated hive, with the erroneous belief that it will prevent bees from desiring to swarm, and still others are recommending equally unnatural methods in spending valuable time in changing their brood from hive to hive all over the apiary, in hopes that they can overcome one of the strongest natural laws that the Creator has stamped indelibly on our bees, I for one will try to use the intelligence God has given me to work in harmony with his law, and see if, by so doing, we can not accomplish far more, and at the same time do it much easier, than to work continually in discord.

If, in the past, man had only let reason harmonize a little more with natural law the world would have been the better for it. There is one thing that I have noticed recently that I was sorry to see; that is, some go so far as to say that swarming is a *curse* to bee-keeping, and that it is a bane to our welfare.

Let us consider which of all the many theories and methods that are now before us is the practical one to care for a colony that has just swarmed, in order that they can all

be united again, and at the same time do away with any desire to swarm again that season. From a long and extensive experience along this line we find the following method far better than any other that has ever been made public. It is this:

HOW TO MAKE THE SWARM CONTENTED.

We will suppose the colony is swarming, and we give them a hive which has its frames filled with foundation. This will give them a chance to use up the material for wax that is fast accumulating in their bodies; and after they are all in the new hive we will bring it back to the parent colony and set it on top, facing an opposite direction. This gives them a new location to work from, and is of much importance. Now leave them undisturbed until about night of the fourth day, then just before dark set the new swarm to one side out of the way and remove every comb from the old colony and shake the bees in the grass two or three feet from their hive, and be sure you remove every queen-cell from their combs and return them to the old hive; then shake the combs of the new swarm on top of the other bees in the grass; look up their queen and let her run into the old hive with some of her own bees. Now put on an excluder; and if you are running your bees for extracted honey set the hive of new drawn combs on top of the excluder, and the colony will all work in harmony together. If you are running your bees for comb honey, put on supers of sections filled with foundation. This will enable them to continue building comb, which has much to do with their becoming satisfied. Now as to why this method is a success: I will say it is all natural. First, the bees have been gratified in their desire to swarm; their queen has returned, during the four days she was in the new hive, to her normal condition of egg-laying; the bees have and are working off the accumulated wax that nature had given them, and they become satisfied with a new location; the old colony that had a lot of young queens maturing has lost them all, they hardly know how, and gladly welcome their mother home again, while the bees that constituted the swarm are so demoralized by losing their location that they soon form a line down one side of the hive to the old entrance. This gives us again a strong full colony ready to settle down to work; and, if properly cared for, they will gather more honey than under any other conditions. With us, not five per cent when treated as above show any desire to swarm again during the season. I will admit that he who is competent to care for only a few colonies may prevent swarming, and secure a fair surplus by this endless amount of tinkering with his brood; but it is unnatural, discouraging, and demoralizing to the bees, and, if practiced by our extensive honey-producers, would require so much help that, from a money point of view, it could not be otherwise than a flat failure.

I do not like to tear down the theories of any man without substituting something

better in their place, which I am sure I have given in the above. Since we practiced this method we are pleased to see a colony swarm, and often wish that more of our bees would swarm than do, for we are sure to get our largest surplus from colonies that are treated as above described.

I don't think that there is any other condition a colony of bees can be in where they will work with such perseverance as when their desire to swarm has been gratified. Some of the nearest apiaries to us have swarmed a great deal this season, while we have had only 31 swarms all told up to Aug. 1, and this from an apiary of 750 colonies, and about 20 of these were caused by a blunder we made in June.

I speak of this small per cent of swarms during a decidedly swarming year to show that, while we allow our bees to carry out their natural instinct, we also apply natural methods to work in harmony with their desires, thus bringing two or more elements to work together, which has much to do with success.

This article was mostly written last March, so it could appear in GLEANINGS in time for you to try this method during the summer; but sickness prevented me from finishing it until now. I am sorry it is so far behind what it should have been; but I could not help it; and as this is my first attempt at writing for nearly four months I wish to thank many friends for their kind, sympathizing, and encouraging letters during my illness; and especially do I thank those who sent me boxes of beautiful fragrant flowers. When these tokens of respect were brought to my bed I could only say, "Oh! why do my friends do so?" It is my sincere hope and prayer that you will all live to a good old age, and that the greatest of all blessings, good health, will be yours to the end.

Delanson, N. Y., Aug. 1.

CHAMBERS' CELL-STARTING DEVICE.

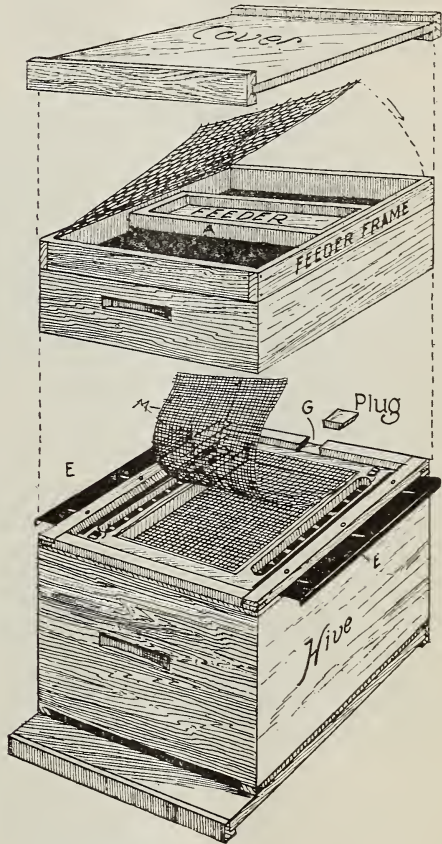
Further Particulars Concerning the Method Described on Page 293; the Use of a Camel's-hair Brush for Transferring Larvæ.

BY J. E. CHAMBERS.

[For the convenience of the reader we reproduce the cut that appeared on page 294.—Ed.]

Since the publication of my article in the March 1st issue of GLEANINGS I have received a number of letters asking for additional information regarding my cell-starting device, and also for a more explicit description of the construction and operation of said device. In answer to all these inquirers and others who may become interested I will state that I have done my best in this article to give full and accurate information, carefully describing every detail. In order to avoid the possibility of any one making a mistake I have gone into the minor details more fully than commonly.

This device consists of a wire-cloth-covered frame, with a feeder nailed crosswise of the frame. By reference to the illustration accompanying my article on page 294 the feeder will be seen at A, with the wire cloth that covers the frame raised up to show the feeder. This frame must be the exact size of the hive in use, with a bee-space over and under the feeder. The wire cloth covering the frame is for the double purpose of keeping the bees from flying out when the cover is raised to pour in the feed, and to prevent robber bees from getting into the hive when



THE CHAMBERS CELL-BUILDING HIVE.

the cover is up for ventilating purposes. The remaining part of the device is what I call the trap-board, which is a plain $\frac{3}{4}$ board, cleated all around the outside edges, and made the exact size of the hive. Through the center of this board there is a hole cut, 14 inches long and 6 wide, covered with wire cloth on both sides. At either side of this double-screen-covered hole is shown another hole the same length, and two inches wide, covered on the bottom with perforated zinc and over the top with tin slides. These slides are shown at E, E, in the illustration for March 1st; and the wire cloth turned back at M is the top cloth covering the large

opening. Through the center of the board the cloth covering the bottom side can be distinctly seen. This double cloth serves several purposes. One is to maintain the colony odor and to keep the reigning queen in the lower hive as far away from the cell-builders above as possible. Still another is to afford heat and a certain measure of ventilation up through the center, where the cell-builders are located. Through the rear cleat in the board can be seen an opening one inch wide with a small plug to fit it. This plug is to be used once, to close up the opening, when the first lot of young bees are to be trapped to start cells; but in three days after the cells are accepted, the plug must be removed in order to let the young bees fly, thereby establishing a sort of independent colony in the top hive or story; and unless this semi-independent condition is established and maintained the best results are impossible. At such times the tin slides may also be pulled out, as the continuous feeding draws the young bees above in sufficient force to complete the cells. After the first batch of cells is completed the bees start a fresh batch with much greater alacrity than at first.

Last fall, as queen-rearing slacked off I shoved in the tin slides and allowed a number of young queens to mate from the hole in the rear of the board, and successfully wintered all such colonies with a queen above and below; and from what I have thus learned I have concluded that it is a better way to winter young queens over than in small separate nuclei.

By reference to the illustration on page 294 it will be noted that the tin slides pass through the side cleats, and perhaps it might be well to state that just enough of the wood should be removed to allow the slides to move freely back and forth, and should be fastened through the side cleat, with small nails fitting into transverse slots in the tin, as shown in the illustration.

In the cut alluded to, the trap-board is shown laid on top of the bottom hive; but be it remembered that this was necessary in order to show up the different parts and construction of the board. However, as I plainly said in my article for March 1, I use shallow hives, and practice nailing the board to the bottom of the upper hive; but it can, of course, be used loose if preferred. When tilting hives on end to get at the brood in the lower hive I find it desirable to have them fastened. This very difference in the description and the illustration has formed the subject of several inquiries, and several parties have asked what a cell-bar is and what is meant by Doolittle cups, and what kind of camel's-hair brush do I use. Most of these things have been written about so much that I had no idea any one would be at a loss to understand their meaning, and it seems ridiculous to describe such things. Several have asked what amount of royal jelly I use in priming the cell cups to receive the young larvae. As this is a question about which there is no generally accepted agree-

ment I will say that, in my opinion, there is no need of more than two or three large drops. However, if the royal jelly is fresh, more can do no harm; but I question if it can be expected to do much good, for under many conditions the bees will remove most if not all of it before they begin feeding in *real earnest*; so I would say, use according to the amount you have, be it little or much. Such is my rule at least.

With regard to the kind of brush to use, I will state that I use a fine camel's-hair brush, about No. 1. These are known as artists' brushes, and should be prepared by trimming down to a fine point at the ferrules, and waxed to within $\frac{1}{4}$ inch of the point or tip of the brush, which should be kept soft and clean at all times.

With such a brush there is no need to trim down the comb in order to get at the little larva. Simply turn the comb to the light. Place the brush down by the side of the small larva. With a very light pressure, just sufficient to cause the tip of the soft hair to spread a little and pass under the larva lying on its bed of food, raise the brush out carefully, and you have the grub all ready to put where you want it. I have tried all kinds of sticks, but none of them are in it by the side of this little brush; and the beauty of it all is, the expert never kills any of the larvae when transferring with the brush, and that is the reason why I get such a large proportion of my cups accepted.

In preparing the colony for cell-starting, proceed exactly as directed in my former article; but be sure to find the queen and put her in the lower hive or super, for it will be impossible to get the bees to start cells with the queen above; and another thing I wish to emphasize is the necessity of having but one comb of open brood in the upper story. Less will do. There should be at least four combs of hatching brood, and care must be exercised in order to get a large number of young bees above, and these must be cut off from their brood and queen in the lower hive for at least 36 hours, though they often start cells within 12 hours; but the idea is, to fix them thoroughly under the queenless feeling, so that a large number will remain and become permanently attached to the upper hive and the rear flight-hole. It will be noticed that, when the plug is removed to give them a first flight, many take a flight, but soon return and take up a permanent residence, and begin to bring pollen and carry water. With these bees the condition of queenlessness is always present, and that of itself seems to help much in inciting the young bees to cell-building again, after a batch of cells has been completed, and fresh bees and brood drawn from below with which to start another lot.

As a matter of fact, after the slides are drawn out many bees will alternate between the upper and lower hives; but this condition is exactly what I always desire, for I find that drones are reared freely under such conditions, and, so far as I know, are never driven off or starved out.

THE FIELD DAY OF BEE-KEEPERS AT JENKINTOWN, PA., JUNE 26.

Snap-shots of this Big Meet; Stingless Bees; how they Routed some Experts, etc.

BY E. R. ROOT.

The stingless-bee demonstration by W. K. Morrison, lately of the tropics, in front of an audience of one thousand bee-keepers, aroused more general interest and merriment than perhaps any thing else at this meeting.

We have heard about stingless bees, and often imagined how delightful it would be to handle a strain of bees that simply could *not* sting, even if they would. Now, this large crowd was to have the pleasure of seeing these bees handled, and to satisfy itself whether or not the stingless variety could ever be made any thing more than a mere curiosity in the hand of a practical bee-keeper. The demonstrator, Mr. W. K. Morrison, had traveled many thousands of

miles for them in South America, even going 300 miles up the Orinoco River, clear beyond the pale of civilization, where it is almost impossible for one even to chop his way through the thickly matted underbrush on the shores of the river. Here he found the bees that survive in spite of the ants and hordes of other insects that would deprive them of life and home. That he was able to bring them so far without losing them is a wonder, but Mr. Morrison says that these bees bear shipping well. They do not seem to get excited and into a fever heat, and suffocate like ordinary bees; hence stand a long journey where other bees would die.

He brought back two colonies of them safely to New York. As the city had placed a



OUR SECRETARY, MR. A. L. BOYDEN, TALKING TO OUR "LONG-ARM" TRAVELING CORRESPONDENT, DR. D. E. LYON, OF RYE, N. Y.—MR. BOYDEN ON THE RIGHT.

MR. BOYDEN GIVING DIRECTIONS TO THE YOUNG LADY HAVING CHARGE OF THE DISTRIBUTION OF VEILS AT THE JENKINTOWN MEET.

ban on keeping bees within its borders, it was not deemed wise to keep even the stingless variety in the city. So precious were they that we did not dare to trust them to the tender care of the express companies, but sent them to Jenkintown by special messenger.

One of the colonies was placed in the honey-house, and the other one in a small building in the rear. Both of them had entrances not to exceed $\frac{1}{4}$ inch (that is all they will tolerate), and around or near these entrances little groups of bee-keepers amus-

ed themselves by watching these stingless bees enter the flight-hole with unerring accuracy. Over the entrance was placed a sign, "Watch the stingless bees hit the bulls-eye."

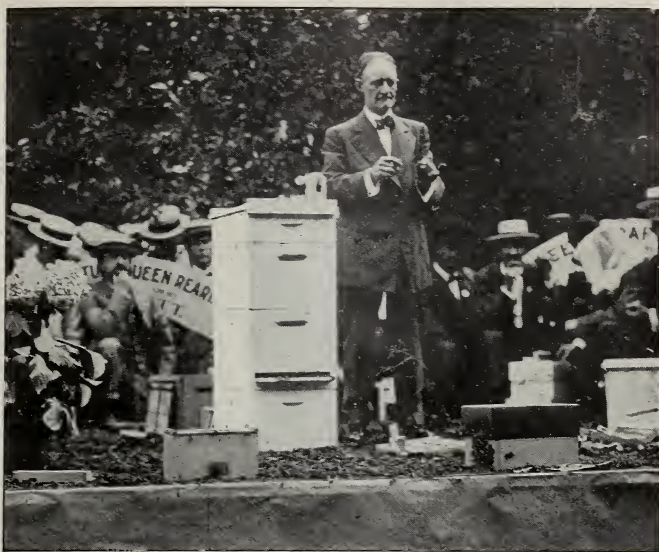
But, to return to our demonstration work.



W. L. COGGS HALL, THE BIG BEE-MAN OF YORK STATE, STOPPING TO EXPLAIN, AS WELL AS TO DEMONSTRATE AT THE JENKINTOWN MEET, HIS METHOD OF UNCAPPING AND EXTRACTING; HAROLD HORNER, HIS ASSISTANT, SHOWN AT THE UPPER LEFT-HAND CORNER.

Mr. Morrison, together with Prof. Surface, Dr. Phillips, Dr. McGregor, Prof. Bigelow, and Mr. Selser, were stationed on a platform about six feet high. The bees were in a rude box, for they can not be confined on ordinary brood-frames. While their brood-comb itself is much like that of the ordinary bees, the *store-cells* are totally unlike them. If you can imagine bumble-bee store cells on a large scale, you can get some idea of these cups of honey.

Mr. Morrison pried loose the top of the hive. Then the fun began. The scientific men on the stand, who desired to get a close view of the wonderful insects, got it with a vengeance. The little rascals poured out in great numbers, and began their furious biting. They crawled into the ears and mouths of their "house-breakers," and sometimes into the nose. They would grab a spear of hair, and pull and twist in a way that was almost as bad as a sting. They fastened



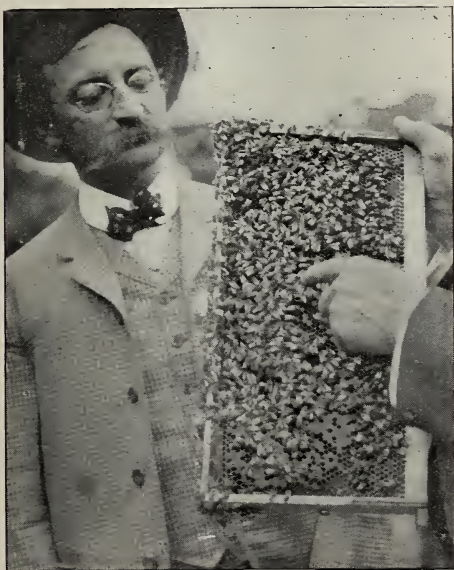
E. L. PRATT (SWARTHMORE) DEMONSTRATING HIS METHOD OF QUEEN-REARING AT JENKINTOWN.

themselves on the flesh, and would bite in a way that would make one *feel* as if he would be actually eaten up. Scores of them would be squealing in the hair of each person attacked, biting at the wrists, fingers, face, etc.

Prof. Bigelow prides himself on being able to stand the onslaughts of ordinary bees with their stings; but he began to scratch and strike in a way that started the whole crowd into uproarious laughter. Finally he jumped, or, rather, tumbled, off from the high stand, remarking, as he did so, that he had "had enough." "Why," said he, "they would drive a fellow crazy."

When the stand had been nearly cleared I concluded that I should like to know what the sensation was like. I repented, but concluded I would have to stand my ground, and I did till I could endure it no longer. I could stand the biting, and I could endure the bees in my hair; but when the little miscreants began to crawl up into my ears and *into my nose* I not only clambered off but fell off the stand, sneezing and blowing to get the little chaps out of my mustache and out of my nose. The crowd enjoyed the performances hugely. Mr. Morrison finally put on a veil, and continued his demonstration. The stingless-bee honey was passed around to the crowds, and samples of the brood-comb were also exhibited. It looked at one time as if we would lose this valuable colony, for their hive was being pillaged, so eager was the crowd to see, taste the honey, and experience the sensation of being "bitten."

Now about those bites. They are not serious. One could stand a thousand of the bees biting at once were it not for the little high-key squeals, and digging and twisting of individual hairs of the head; and then the little chaps seem to *know* that the proper thing



MR. R. DEGEN, OF HOBOKEN, N. J., LOOKING AT A FINE FRAME OF CARNIOLANS (LOCKHART STRAIN), THAT WERE BEING DEMONSTRATED AT THE JENKINTOWN MEETING.



THE BACK EDGE OF THE CROWD THAT ASSEMBLED IN FRONT OF THE GRAND STAND AT JENKINTOWN, WHERE THE STINGLESS BEES WERE BEING HANDLED.

to do is to pull at the eyelashes, and fly into the nostrils, when, presto! they are victors.

Mr. Morrison gives it as his opinion that these bees can be domesticated in the United States. There are seldom more than 2000 bees to the colony; they are vigorous defenders of their home, and when left alone will mind their own business. They very much resemble yellow Italians in size and color-markings. Their general shape is somewhat blunter, and the whole body is a little shorter (see illustration in Dec. 15th GLEANINGS, last year). No scientist as yet knows their species; in fact, I believe it has not been named. We know very little of their habits or how they may be propagated. I believe Mr. Morrison stated that stingless bees or *melipona* have more than one queen. In that case the loss of the queen would not necessarily cause the loss of the colony. As these bees belong to an entirely different genus they can not, of course, be crossed with any of our common varieties; hence there will be no danger of intermingling.

One of the pictures here shown represents the rear of the crowd while the stingless-bee demonstration was going on. The elevated stand is shown at the upper right-hand side, about half way up.

THE DEMONSTRATION BY E. L. PRATT.

The work performed by Mr. Pratt, commonly known as "Swarthmore," both at the field-day meeting a year ago and this year, attracted a great deal of attention. I think it is safe to say that Mr. Pratt has gone deeper into the general subject of queen-rearing than any other man in the United States. He has made a number of interesting as well

as valuable discoveries in connection with this subject, and the crowd was always interested in hearing him talk and explain his methods. One of the illustrations herewith shows him in the very act, on his elevated stand, with his various appliances scattered here and there.

DEMONSTRATION BY W. L. COGGSHALL.

Mr. W. L. Coggshall, of Groton, N. Y., the man who has the reputation of being the most extensive bee-keeper in the world, was on the program for illustrating his method for taking off extracted honey; for be it known that Mr. Coggshall is the man who teaches all his helpers to become "lightning operators." His lightning act of kicking off an extracting-super full of bees and extracting-combs has attracted wide attention among bee-keepers generally. At the various conventions, and at this meeting in particular, Mr. Coggshall was jossed about his kick-off-super act. I had seen him do the work at his own yards, but did not see it at this meeting. As I came up with the camera I said, "Say, Coggshall, I want to catch you in the act of kicking off a super."

"Say, Ernest, you want to poke fun at me about this kick-off act."

As he said this I caught him with the camera. The result shows in the upper right-hand-corner of the large plate. Leaning against the fence and the uncapping-can he said, "Say, some of you fellows have got the wrong idea. If you kick the super right, you loosen the propolis and do not disturb the bees any more than when you use a wedge or a pry. The kick is no harder than just enough to break the propolis connections.

It saves time; and if a little smoke be now introduced over the top of the bees and between the super and brood-nest, the bees will be no more difficult to handle than when the super is pried loose in the slow laborious way when the screwdriver method is used."

As Mr. Coggs shall is intensely practical, and works his bees for all there is in them from the point of dollars and cents, this demonstration work was closely followed. He showed, among other things, how to use a bee-brush—the one bearing his name; how to uncap the combs, starting the knife at the bottom and gradually working upward; how to hold the frame in the left arm when cutting out a small patch of capping. The latter act is shown in the lower right-hand corner of the large plate. This is a little trick that may be found extremely convenient by others. But there is nothing like seeing a thing done by a practical man who knows his business.

Mr. Harold Horner, in the upper right-hand corner, was general assistant to Mr. Selser, field marshal of the day. Whenever a demonstrator needed help he turned in. On this occasion he was helping out Mr. Coggs shall in running an extractor while the other was taking out the combs, clearing them of bees, and uncaping.

I might explain that Mr. Coggs shall wears a one-piece bee-suit, the same opening in front. The fewer pieces one can have—that is, the fewer openings for a suit, the better for the bee-keeper, said Mr. Coggs shall. In the bee-yard he ordinarily wears boots. The legs of the trousers of this suit are tucked in the boots, and then when he is doing the

strenuous work he wears fingerless gloves, the gauntlets of which fit over the sleeves of the bee-suit.

Mr. Coggs shall also illustrated his method of making smoker fuel. He rolls old gunny sacks, burlap, or other material of that sort, around a stick until it is of the diameter of the inside of the smoker-barrel. These are tied at the proper intervals with a string, and then chopped up with a sharp hatchet into suitable lengths for a smoker. The end is dipped in a solution of saltpeter, when it is ready for ignition. Right over the name, "W. L. Coggs shall," will be seen a sample of this fuel burning in the hands of one of the on-lookers. Mr. Coggs shall showed how a piece of this fuel could be used without any smoker by holding them near the frames and blowing on them with the breath.

THE DEMONSTRATION BY PROF. BIGELOW.

Another demonstration that attracted a good deal of attention was that of Prof. E. F. Bigelow, of Stamford, Conn., wherein he showed the use of his Pearl Agnes hive and the Bigelow Educational hive. In two of the illustrations given he has before him a class of children to whom he is demonstrating the art of handling bees in his miniature hives. One of the boys shown in the foreground appears to have had a practical demonstration of the effect of a bee-sting on his upper lip. So far as I know this was the only sting that was received that day. The boy, however, as "will" be seen, stood his ground in spite of the enlarged lip.

Prof. Bigelow, like Prof. Surface, is a natural and easy speaker. He scarcely needs



A SNAPSHOT AT THE JENKINTOWN APIARY WHILE SOME OF THE DEMONSTRATING WORK WAS GOING ON. LOOKING TOWARD THE HONEY-HOUSE SHOWN IN BACK-GROUND. DR. LYON IS ON THE ROOF ABOUT TO PHOTOGRAPH LOOLITTLE.



PROF. E. F. BIGELOW AT THE JENKINTOWN MEET DEMONSTRATING A PEARL AGNES HIVE OF BEES TO A COMPANY OF CHILDREN. ONE LITTLE BOY JUST IN FRONT OF THE PROFESSOR GOT A STING IN THE UPPER LIP.

an introduction to our readers; but any one who may have an opportunity of seeing him make a demonstration or hear one of his interesting popular lectures, should certainly hear him.

WHY THE BEES AT THE JENKINTOWN APIARY ALLOWED THE CROWDS TO PASS FREELY AMONG THEM WITHOUT MOLESTATION.

I said that, so far as I knew, there was only one boy that was stung at that time. This does not necessarily indicate that the Root bees were so extremely gentle that they could not be made to sting; but we have learned by experience that, when there is a large crowd in a bee-yard, the bees will become utterly demoralized, and, so far from offering an attack, will buzz around in aimless confusion trying to find the entrance, for the whole lay of the land around them has been changed. The thought of "asserting their rights" or wreaking vengeance seems to be wholly lost in the other thought, "Where are we at? When and where shall we find our homes?" The crowds intermingle among the hives and the bees with perfect impunity. While some of the bee-keepers wore veils at the start they gradually lifted them up during the rest of the day. The various photos shown in the last issue and in this prove that scarcely a veil was used. The next day, when Doolittle, myself, and one or two others went among them they were by no means good-natured; indeed, they drove one of the young ladies, who was "slicking up," out of the yard, and compelled Doolittle and me to put on

veils. You see they had recovered themselves from the disturbance of the day before, and were then on their dignity.

Speaking about bee-veils reminds me of our bee-veil stand. Mr. Selser had arranged to have such a stand tended by a couple of girls, convenient of access. Our Secretary, Mr. Boyden, was giving some directions about the distribution of veils when our camerist caught the bee-veil stand and all. The result is here shown.

Mr. Boyden is shown in the first view, talking to our "long-arm correspondent" Dr. D. E. Lyon.

I regret that we were unable to get a picture of all of our demonstrators, among them being Mr. Grant Stanley, who showed how us to handle Danzenbaker closed-end frames. He made an excellent demonstration of the hive.

In our next issue we will give the names of those who were successful in the prize-winning contests, as well as a few other facts that will be of general interest.

USING HONEY-BARRELS THE SECOND TIME.

Can old basswood honey-barrels be used for honey again? If so, how should they be cleaned to make them safe for honey again? These barrels were not cleaned after the honey was taken out. JOHN SEITZ.

Mauston, Wis., May 19.

[Yes, such barrels may be used again. Wash out with hot water, and then when dry coat with hot wax.—ED.]

FOUL BROOD.

How to Cure it; a Modification of the McEvoy Plan; how to Render Diseased Honey Fit for Feeding Bees.

BY W. A. H. GILSTRAP.

It is a needless waste of good property to burn diseased brood with combs and frames. The queen and bulk of the bees should be shaken into a new hive in a new location, and the brood allowed to hatch on the old stand. The bees are shaken from the center of the brood-chamber, and the queen nearly always goes where we want her; but hives are numbered and dated in duplicate, so the queen can be easily located in four days. In wholesale work we can not look for queens in strong colonies in a honey-dearth.

It is very important to have all healthy stocks removed from near infected stocks before the treatment is begun. If little or no honey is coming in at the time, I place a comb of healthy brood with the forced swarm to keep it at home for four days, and then even this brood is placed with the rest of the old diseased lot to hatch. The queen-right colony can be given healthy brood, and marked "cured."

The brood will soon hatch from the old combs, and the bees can be given an inferior

comb with a little brood, if only a small piece is inserted in the comb for the purpose. The comb can be given a term in the solar extractor, and the residue put in a wax-press or stove. Boil the frames. The wax is all right after melting under good steam pressure. The honey is good to feed bees after being diluted, and then boiled ten minutes. This last statement was made by Prof. Cook in *The California Cultivator*, and I have proven it to be absolutely correct. I fear an open vessel, as it might leave some honey slightly above the water. By placing the diluted honey in a screw-cap can (screw off) it will boil and steam until safe.

Four days after taking the diseased honey from the old colony, all honey may be taken from them, as it might be diseased by this time, and healthy brood and comb may be given. If they have not raised a good queen, which sometimes occurs, they may be given a queen or united with some colony.

To have brood ever present is not necessary if honey is coming in; but my first experience with foul brood was during a long and severe honey-dearth when ordinary methods would not work. To cage queens required too much exposure of honey. To destroy one or two hundred dollars is serious, and, when unnecessary, should not be tolerated. I find no need of disinfecting or washing hands in handling frames or hives, if no



A NEARER VIEW OF PROF. BIGELOW AND HIS CLASS OF CHILDREN.

honey is touched. This plan is a complete success, avoids waste, and is done with little work.

Ceres, Cal.

[Your method of treatment, so far as I can see, is all right except that one will be taking long chances to rely on ten minutes' boiling, which, while proving effective possibly nine times out of ten, yet the tenth time the disease might be spread all over the beeyard from such honey fed back. We had a report of that kind some time ago, when ye editor was most severely scored for even suggesting that ten minutes' boiling of honey would be sufficient. The complainant averred that he had followed my advice, presuming I knew what I was talking about, and, instead of curing the one or two cases he had in the yard, he spread foul brood through the whole apiary. If I were to let this go unchallenged, I am afraid this correspondent would come back at me with clubs and stones. Shortly after this time, elaborate experiments conducted by several scientific men showed that sometimes it took two hours of boiling, repeated in two or three days, before all the spores of the disease would be killed. It is one thing to kill the spores, another to kill the actual living germs. The latter may be very easily destroyed by the application of a little heat.—Ed.]

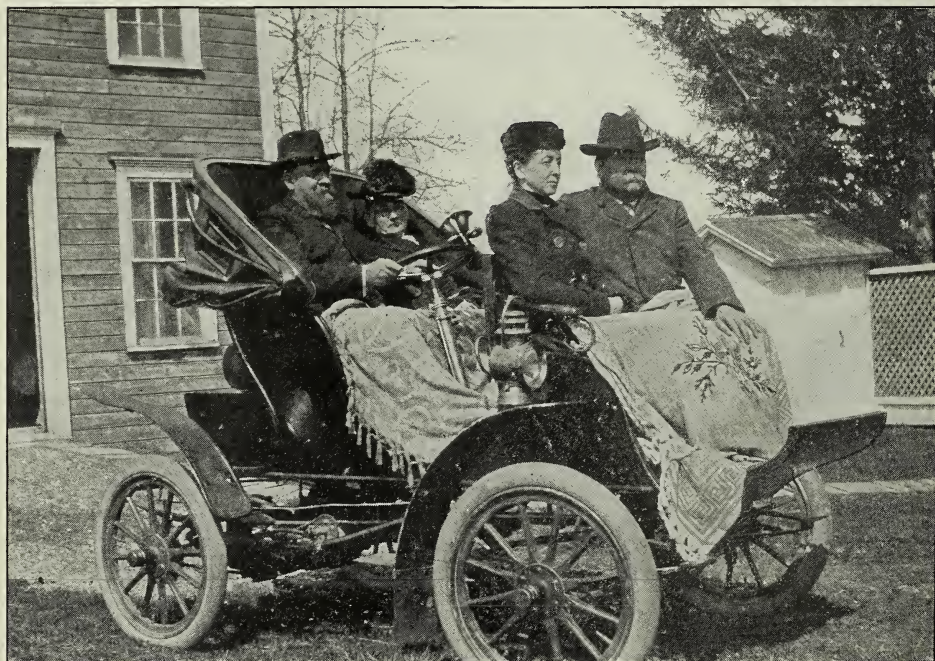
MOVING BEES

In Hives with Open Entrances.

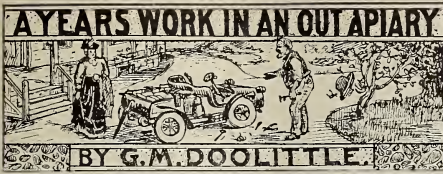
BY J. D. COLES.

In GLEANINGS for April 1 is an article asking a question about moving bees with closed entrance. Having moved hundreds of colonies, I prefer full flight of bees all the time. A few years ago I moved on the main street here 27 colonies half a mile on a wheelbarrow, two to three colonies at a time, giving bees full liberty. In moving two colonies in Florida, in my early experience, I had a hive burst open, and bees filled the air like a swarm, but did not disturb either myself or horse, but followed the wagon 28 miles in the air. When it got dark the bees went into the hive. The last two miles was after dark, and not a bee stirring. The next day, when I gave the other colony its liberty, it swarmed and clustered on a saw-palmetto, and had to be hived. The colony that had its liberty carried much better than the one confined. When I am alone I never think of closing the entrance; for, to move the bees, I have had much better results in every way with the open door. The trouble is, if a beekeeper could always do the work himself without calling outside help it would always be much pleasanter, as help often makes trouble instead of averting it.

Woodstown, N. J.

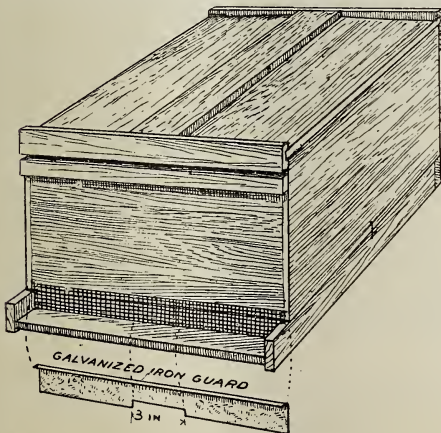


READY FOR A ROUNDABOUT RIDE TO THE OUT-APIARY. SEE DOOLITTLE'S ARTICLE ON NEXT PAGE.



CHAPTER XI.

It is now October 10th, and one of those beautiful clear days with enough of smoke and "haze" in the atmosphere to give a balmy air, which makes one of our fall days in New York so delightful. The leaves, which are soon to fall from the trees, all gorgeously arrayed in their many-dyed hues, are made more enchanting to the eyes by being "kissed" by the morning sunshine—surely a splendid day for an auto ride; and, to combine pleasure with profit, Mrs. D. and myself are soon traveling at an easy "pace" toward the out-apiary, breathing the healthful ozone of an autumn day, and feasting our eyes on the ever varying changes of the landscape before us. We go on a roundabout road, instead of the direct one usually traveled, so as to see new scenes; but even this, and with the gait of the auto so slow that I, the driver, need not be very closely confined to the chauffeur part of the matter, causes us to arrive at our destination all too soon. Mrs. D. goes in to have an agreeable hour with the farmer's wife, while I hie me away

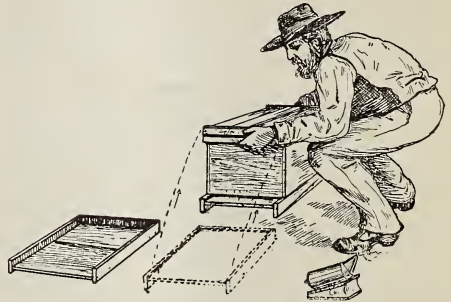


MOUSE-PROOF ENTRANCE; $\frac{3}{8}$ MESH; BOTTOM-BOARD WINTER SIDE UP; HIVE-FASTENER WITH STAPLES.

to the bee-yard, the most delightful spot in all the world to me except my home and the church and Sunday-school of the living Christ.

With a swinging motion of the hands and forearms, together with a sort of backward bend, while the elbows are on the knees, hive No. 1, row 1, is "swung" from its stand to the ground, immediately by the stand's

side. A reserve bottom-board is now placed on the stand, winter or deep side up, when a right-sized piece of galvanized wire cloth having a $\frac{3}{8}$ -inch mesh (the same being used as a mouse-guard) is slipped into the saw-kerf made for it on the inside edge of the two-inch strips, which holds the hive that far from the board below. A few puffs of smoke are now blown in at the entrance of the hive, when the point of the ever useful piece of wagon-spring is thrust into the same, and, with a lifting motion, the bottom-board is



THE LIFTING-SWINGING MOTION.

made to part from its place through the breaking of the propolis which has been used during the summer to fasten it there.

With the same swinging motion, as before, the hive is almost instantly on the newly prepared bottom-board, and brought forward till it touches the mouse-guard of $\frac{3}{8}$ -inch-mesh wire cloth. When the bees are wintered at the farmer's cellar, who owns the land the out-apiary is located on (and I should always winter them there if possible), this mouse-guard is an absolute necessity, as a former experience of rat-and-mouse-destroyed combs and bees told me. Hive No. 1 now has an entrance two inches deep the whole width of the hive, all open except the wire cloth. This must be tightly closed in some way for a month or so, or until the bees are set in the cellar, to prevent robber bees from gaining access to the honey in the hive. This is best done with a piece of galvanized iron, the same size as the mouse-guard, having a piece three inches long by $\frac{3}{4}$ inch deep cut from the bottom side of it, when it is slipped down in the saw-kerf on the outside of the guard.

Having No. 1 thus ready for cellar wintering, the bees on the bottom-board, if any still adhere, are jarred off in front of the hive, and I go to No. 2, treating it in the same way I did No. 1, only using the bottom-board from No. 1 instead of a "reserve" by turning it deep side up. In this way I keep on till all are thus treated.

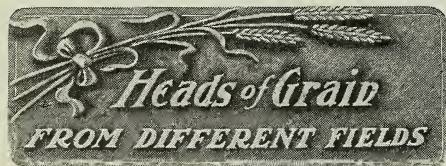
By this swinging process, as here given, which I always use in changing the bottom-board both in fall and spring, there is not half the fatigue and none of the backache that are experienced by the usual way of lifting hives which are heavy with honey;

and I would recommend it to any and all, in any and every place where it can be used.

In this change of hives and bottom-boards, any that are light in stores are quickly detected; and if any such are found, they are so marked as I go along. I do not find any of these light colonies oftener than once in three or four years; and when I do, all that is necessary is to open the hive and take out one, two, three, or four of their nearest empty combs, and give them as many heavy ones from the reserve pile. In giving heavy combs of sealed honey at this time of the year I think it better to alternate them with the light ones which the colony has, where more than one are given, as I consider such alternation more in harmony with good wintering.

Having the bottom-boards all turned, and knowing that all colonies have plenty of stores, I next fasten all the bottom-boards to the hive by driving a crate-staple on either side, with one point going into the hive and the other into the bottom-board, as near the center as is convenient with rapid working. Some seem to think that it is better to use one of these staples at each corner, and this may be so where hives are to be hauled from the out-apiary home for wintering, and back again in the spring; but for carrying to the cellar, and setting out again, the carrying being done by two men and a rope, the two crate-staples are amply sufficient. In driving these staples I find that a hand-ax, or something having a driving-face sufficiently large to cover the whole staple at each blow, thus driving both points at the same time, is much better than an ordinary hammer that drives only one point at each blow.

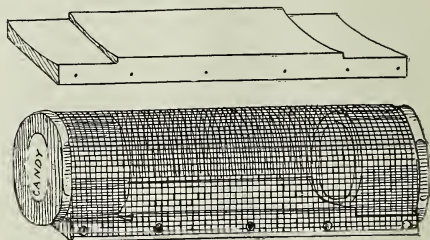
With the driving of the last staple the work done at the eleventh visit is accomplished, as well as that for the year, except setting the bees in the cellar. As the day still continues fine, we take another roundabout road for our ride home, where we arrive in due time, feeling that the day has been very profitably spent, even though we have consumed the most of it on the road.



A NURSERY AND INTRODUCING-CAGE COMBINED.

I am mailing you a sample nursery and introducing-cage for Swarthmore flanged cell cups. At one end one of the cups should be bored clear through for candy to introduce by the candy plan. For a nursery it is much better and more natural to fill the waxed hole in the cell-cup with thin honey. The

wire cloth should be folded at top and bottom, and where nailed to the wood. This is better than the round Stanley cage because it will not roll if laid down, and the cages can be placed in actual contact in the holding-frame. As a nursery, 54 of these cages will stand in an open-top holding-frame with three rows of cages, each resting on a $\frac{1}{4}$ -inch-thick bar. By turning cages the other way in the frame (wood backs all to one side of the frame), 57 cages go in one frame. This saves handling and storage room. Or 19 will go in a Swarthmore cage-pocket (of the Swarthmore cage only 12 go in the same space), or 36 to 38 in a double-depth Swarthmore cage-pocket (see "Cell Getting," by Pratt). A nursery of the same type is also adapted to your style of wood cell cups. Simply have a ledge $\frac{1}{2}$ inch from each end of the wood back, thus.



These ledges prevent the cell cups from going in too far. In any nursery the queen-cells should be removed soon after the queens emerge, and blank cups substituted, or many queens will enter the queen-cell and try to gnaw out through the wood base. Strange to say, they will stay there until they die, instead of backing out.

I wish you would make these cages to sell. They will be far simpler and cheaper than the Titoff cages, and not half so bulky.

Meridian, Idaho. E. F. ATWATER.

[Your queen-cell and queen-cage is admirably adapted for use with the Pratt flange wooden queen-cups. It would be cheaper than the Titoff cage; and it is my opinion it would be more convenient, and better for all-around introducing. We will have some made and try them.—ED.]

BUILDING UP SMALL SPRING COLONIES; ALEXANDER'S PLAN A SUCCESS: THE IMPORTANCE OF FOLLOWING INSTRUCTIONS.

Why can not a beginner (or perhaps I should say an experienced man) do as he is advised? Why try your own tricks with another's deck of cards? You generally make a failure, and blame the cards. This spring I found I had two weak colonies, and one with enough bees to cover the surface between two Hoffman frames with a patch of brood about two inches square. I received GLEANINGS for March 15, and saw Alexander's method of tiering up weak colonies. I thought it looked good, so I tried it. I

found three of my strongest colonies; took off the covers, put on a queen-excluder, set the weak colonies (cut down to four frames) over it; put a super over them both, and quilts over the tops and sides of the frames; put on the cover, and did not look at them again for over two weeks. I then found them full of bees and brood. I do not know where all the bees came from, but they were all there, and plenty of them.

I gave the weak ones two frames of capped honey, one on each side of the brood, and an empty comb outside of all; and I am proud to say, thanks to Alexander, they are now by far the strongest in bees out of 28 colonies. They have at this date, May 19, three full eight-frame hives and one extracting-super full of bees and brood, and this without feeding. PENN G. SNYDER.

Secane, Pa.

THE ALEXANDER PLAN OF BUILDING UP WEAK COLONIES; ANOTHER CASE OF REPORTED SUCCESS.

I have tried the Alexander plan of placing weak colonies over strong ones with good success. April 15th I placed five very weak colonies over strong ones. Two of the weak ones now occupy two-story hives, and the other three are nearly ready for uppers.

Two of the strong ones occupy three-story hives; and the other, three two-story hives. If I hadn't followed Alexander's plan the weak ones would have just nicely built up and got enough honey to winter if the season had been favorable in this locality. As it is I shall get some surplus from them if we have the honey-flow. I had little faith in the plan. I was quite sure there would be some queen killed, and sure there would be a loss of brood from so many bees returning to the old location at the time of separating; but nothing of the kind occurred.

I want to emphasize putting weak colonies over only those that are exceedingly strong—so strong that they really ought to have an upper story put on. Then, unless the strain of bees and the locality have a bearing I see no reason why any bee-keeper should make a failure of it. This one scheme is worth dollars to me, as it has always been a puzzle to get the very weak ones in shape for the honey-flow. E. W. FOX.

Hillsboro, Wis., June 7.

THE ALEXANDER PLAN FOR BUILDING UP WEAK COLONIES A SUCCESS; HOW TO WAX BARRELS.

Please let me know how to wax a barrel inside to keep honey in.

I have tried uniting by the Alexander plan this spring. I had good luck. I had one weak colony which I bought—a mere handful of bees, and one that was boiling over with bees; so I thought I would try the Alexander plan. This was just a few days after I had put them out. Then I did not look after them for two weeks. When I did examine them it was nearly full of brood and larvæ in all stages. The 10th of May

I was looking for the queen to clip her, and they were preparing to swarm; so I took them off and now I have two strong colonies. It worked so well I tried another one with equal success. It was the best scheme I have seen in print yet—for me at least.

Otisville, Minn.

ELOF LINDGREN.

[To wax a barrel on the inside, proceed as follows: Clean the barrel, then dry it out thoroughly, allowing it to stand a few days with the bung open. Melt about ten pounds of beeswax or paraffine, and pour it into the barrel by means of a funnel. Quickly drive the bung in, roll the barrel around, then turn it over end for end, making sure that the melted wax covers the entire inside of the barrel. Loosen the bung with a hammer; and if your work has been well done the bung will fly out with a report. Pour out the surplus wax, then treat the next barrel in the same way, but not unless the wax is very hot. A barrel ought to be liquid-tight without using the wax. It is a question whether it is good policy to use any barrels not tight, and depend on the wax or paraffine to make them so.

Do not make the mistake of washing out a barrel with hot water and then immediately waxing it. All barrels for honey purposes should be bone-dry. In that condition the hoops should be driven down as far as they will go. Then they may be waxed to prevent the odor of the wood from getting into the honey.—Ed.]

THE OHIO FOUL-BROOD BILL AND THE HISTORY OF ITS PASSAGE.

This association has made every effort since the new legislature met to make the Ohio foul-brood law mandatory, which finally ended in a grand success, due to the hard work of the committee on law, of the society, consisting of Mr. John H. Kroeger, Mr. John Sommers, Mr. John Hoffman, Jr., Mr. J. G. Creighton, and Mr. C. H. W. Weber, all practical bee-keepers of Hamilton County.

The Honorable Mr. Thomas Hunt, Senator from Hamilton County, presented the bill in the Senate, and it is due to this gentleman, who took a deep interest in its passage, that it passed the House of Representatives.

Mr. Henry T. Hunt, a brother of the Senator, and Mr. Eugene Adler, both Representatives of Hamilton County, in conjunction with their colleagues, deserve all credit this association can give them for their moral support.

Attorney G. R. Werner, an honorable member of this association, to whom every respect is due from this association, revised the bill in its present form, and bent every effort to call the attention of the Ohio law-makers to the necessity of its passage. This gentleman, though no practical bee-keeper, takes a deep interest in every thing pertaining to the welfare of the bee. In fact, the day may come when he will find sufficient time to spare from his legal duties to keep several hives of our little honey-gatherers to make a thorough study of the wonderful doings of

nature. This is the opinion of his well-wishers.

Now that the law is passed by both Houses, this society, being a State bee-keepers' association, urges every county in Ohio to organize bee-keepers' societies for the promotion of fraternity among all men and women who keep bees.

The Ohio foul-brood law does not pertain to this dread disease only, but to other diseases of the bee also. Further, it provides for the appointment of an inspector of these diseases, in every county where bees are kept, whose duty it is to see that all bees are kept in movable-comb hives, which is a great stride toward the improvement of the bee in every particular.

HENRY REDDERT,

Sec. Southwestern Ohio and Hamilton Co.
Bee-keepers' Association.

THE BEE'S SENSE OF HEARING; THE EFFECT OF THUNDER.

I notice on page 233, where Prof. Bigelow wants facts from Dr. Miller as to why he thinks bees hear. My experience says they do hear, and that without a doubt. Natural conditions give me this knowledge. Whether bees can hear sounds inaudible to the human ear I do not know; but I do know that bees can distinguish some sounds better than we can. There are several stone-quarries south of my residence, the nearest being half a mile distant, and the furthest two miles away. Blasts are made three and four times a day. When a good blast is made, the jar is felt a mile away; and the rolling sound or thunder that accompanies these blasts is heard for miles around, often fooling me in the summer months, as these sounds are hard to distinguish from *thunder* of an approaching storm.

For the last two years, when hearing these sounds I always consult the bees, for they can tell better than I. If it is a blast they'll continue work as usual; but if it is the thunder of a distant storm, you ought to see them coming in from the fields, pell-mell, entering their hives. This seems to show clearly that they can hear, and distinguish better than we, for both these blasts and natural thunder cause vibration in the air.

Findlay, Ohio.

W. H. DREYER.

[It seems to the editor that the arguments you advance in favor of bees hearing are negative rather than positive. Apparently the blast which sounds like thunder, and the real thunder itself, have no apparent effect on the bees. But a very black sky with a heavy atmosphere will, as we know, drive bees home pell-mell. So I should say it was not the noise, but the sense of sight and feeling that induces them to rush home. If, on the other hand, they would fly home every time there was a blast at the quarries, and there was a good clear sky at the time, *then* we might assume they either heard or felt the concussion. In saying this I do not mean to say that bees do not hear, for I believe they do.—ED.]

THE VALUE OF SWEET CLOVER AND OATS FOR HAY.

I have a correspondent in Alabama who owns a farm of 640 acres, who grows 160 acres per year of oats and sweet clover, and cuts the combination crop expressly for hay. He has blooded stock (cattle) and keeps no bees. He says the hay when baled and marketed in Birmingham, Ala., sells readily at \$15 per ton.

M. M. BALDRIDGE.

St. Charles, Ill.

[Farmers and ranchmen as well as State legislators will some day recognize the value of sweet clover as a forage-plant. Some of the more progressive of them do recognize it now. Pity that the average run of farmers will not follow more in the wake of our experiment stations manned by practical and scientific men.—ED.]

IF I WERE TO START ANEW; PAINTING HIVES, ETC.

If I were starting anew I would adopt the hive holding eight Hoffman frames with $\frac{3}{4}$ -inch entrance. I should want one super of shallow extracting-frames for each hive, to be used at the opening and closing of each season; but for the main crop I would work for comb honey, for the reason there are so many who extract before the honey is ripened (and your honey must compete with his), that the production of honey has become drudgery.

I would paint lids white on one side and red on the other—red side up in winter, and the hive white at the corners, say 3 inches, leaving 14 inches not painted; but if one side must be exposed to the noon or afternoon sun, paint it all white or you may wish you had. There are probably a few people who do not know the value of painting, say, three inches of each end of a ten-foot board. To such I would say, try it. I did so five years ago, rather unconsciously, but am much pleased with the result. The boards do not warp nor look old—probably do not take water to any extent.

As to handling comb honey, I think J. A. Green's plan is *ne plus ultra*. Any one who can handle that plateau comb honey without granulation in twelve months is all right; and R. C. Aikin wears the laurels for handling extracted alfalfa honey cheaply.

The slogan to-day is, "How and in what shape can we furnish good honey, at prices which the workingman can stand?" They will not take poor honey at any price, and the price of fancy honey is too rich for their blood.

E. PORTER.

Miramar, Cal.

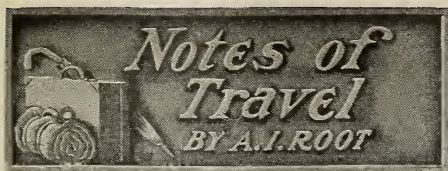
NEW QUEENS FOR SHAKEN SWARMS.

Would it be advisable to introduce a queen into a newly shaken swarm in place of the old queen?

WM. PEARCE.

Sault Ste. Marie, Mich.

[If the queen is old or otherwise undesirable you can make the substitution, but it would be necessary to introduce her in the regular way, of course.—ED.]



CAUCASIAN BEES AT "THE CABIN IN THE WOODS."

On p. 753, June 1, I told you about dividing a colony of hybrids into three equal parts, giving a young Caucasian queen to each of two of the parts. This was the first week in May. I stayed with them until both young queens had begun to lay; then I fixed things as well as I could, and left them entirely by themselves for seven weeks. I felt quite a little anxiety during the seven weeks to know whether they would be self-sustaining or not.

Well, I have told you about getting back to the cabin the first week in July; and my first anxiety was to see whether bees were going out and in at all the entrances. Sure enough, each colony was working finely, including the two-story twin hive. Grass and weeds had come up near the entrances, so there was much trouble in getting out and in; but on looking inside I found that honey had evidently been coming in continuously from the first week in May until the first week in July. Before we had been there two hours, one of the Caucasians sent out a swarm. Was that not clever, to wait almost until the very moment I got around? The same colony sent out two after-swarms, but they were both hived in two-story twin hives. The other Caucasian colony swarmed also; and, last of all, a swarm came out of the colony having the old hybrid queen. That made seven colonies from one in two months. The original rather weak hybrid colony was made into three by artificial swarming; the three sent out four natural swarms, making seven. Of course, these young queens swarmed the same season; but their hives were crammed full of honey, and one of them was in a two-story nucleus hive. This one had eight nice queen-cells on just one of the little frames.

When I made my first trip up to the cabin I carried four nucleus hives in a bundle in my hand; and after I got there I had four more sent me by express, filled with frames of foundation. I mention this to show how little the expense of transportation will be in keeping bees in these two-story nucleus hives. On the page I have referred to, June 1, I said you could get very nice honey out of these little frames, and that is just what the boys and I have been doing for the past three weeks. Either the natural swarming, or the fact that we had Caucasians, made those little hives of bees extra workers, and I lately have, for almost the first time in my life, fallen in love with natural swarming as

a method of increase. If you keep bees in these little hives it will encourage it; and I think I never enjoyed any fun as I did seeing those little second and third swarms go to work and build up. Of course, they had frames of foundation. But one of these little sheets would be built out into pretty white comb, quite deep enough for the queen to lay in just over night. Basswood came out about the middle of July; and just as soon as the young Caucasians could see they were out and at it; and some of them would come in with heavy loads, even after it was fairly dark. Of course, I cut the weeds away from the entrances, and fixed them nice "door-yards." The little hives were in the shade of the peach-trees in front of the cabin. Well, it was so easy taking the honey from these little hives that several times while we were eating our meals (and the boys happened to express a wish for some of that nice honey) I took a plate from the table, opened the hive, cut out a chunk, and was back almost before they missed me. As basswood was not out, the bees were working strong on milkweed on a deserted farm near us. Well, the boys thought (and I do not know but I agreed with them) that it was about the most delicious honey we ever tasted. The combs that were put back in the little hive, with a gap or opening in them would be built up again with beautiful white comb in 24 hours or less. Just think of it! The hives are so light and simple that you can easily carry four of them in one hand. They are making them a little wider now, so that with the division-board removed it is just right for five little combs: so that a two-story nucleus has a little more capacity than three Langstroth frames, and the shape is ever so much better for building up or for storing honey than three Langstroth frames.

Now, if you wish to keep bees in these little hives you do not need any of the complications of sections and supers—that is, if you want to raise just enough honey for your own table. If the little hive gets too full you can put on a third story; or if you want increase, let them swarm, and the swarms from these little hives are just the prettiest things to play with I ever got hold of in my life.* Whenever any woman or child came on the premises it was a delight to me to show such my treasures; and you ought to

*When the bees commence on one side of a sheet of foundation, and draw out the cells on this side before they commence on the other, the side where they are at work will bulge outward, making the comb convex instead of flat. In order to get the combs all flat and straight I looked them over every day; and with the ball of my hand I pressed the convex surface back where it ought to be. Well, at first I thought I would have to shake the bees off; but I soon discovered that, with the *Caucasians*, this was not necessary. By placing the hand gently on the backs of the bees they will scatter out of the way; but it is just fun to see them hustle back to their work after the hand is removed. When the Caucasians are building comb you can take out the frames and pass them around among different people, and they keep on drawing out the soft wax—that is, if it is a hot summer day, just as they do while the comb is in the hive. Other races of gentle bees may do this, but I never noticed it before.

have seen their eyes sparkle and to have heard their exclamations of pleasure and surprise. When we had more honey than we needed for table use I cut it out and sent it on a plate to the neighbors for a present. Perhaps the milkweed and the basswood yield had something to do with the *exceedingly* beautiful pure white combs that they built in those little frames. Why, they were so handsome it seems to me I would have some bees, even if they never brought in a drop of honey. To any one who loves to study God's work, especially as it is manifested in the insect world, such a little hive of bees is worth more than can be estimated in money. When you open one of those little hives and hold one of the beautiful combs up to the gaze of the children, or, better still, let them take it in their own hands, and see how gentle and kind the bees are, just repeat those old familiar lines:

How doth the busy little bee
Improve each shining hour,
And gather honey all the day
From every opening flower!

God bless dear old Dr. Watts!

When I first opened my eyes in the morning I went outdoors to see those gentle bees at work. I watched them more or less at intervals during the day; and before going to bed I enjoyed listening to their happy hum of contentment, and I think I may say *praise* to the great Father above. I was around them so often that they no doubt became accustomed to my presence.

I am sure this is a great factor in making the bees gentle; and when those new swarms were building their combs I do not know but I sometimes opened their little hives a dozen times a day; but I was as careful not to pinch them nor hurt them in any way, almost, as if it had been a baby—say my youngest grandchild.

I want to call the attention of the Root factory to the fact that they have not as yet made these little hives with the view of having them a *two-story hive*. When I put a second story on the lower one the space was so great that the bees would build burr-combs on which to climb "upstairs." I finally put sticks in the rabbets to raise the top of the frames level with the sides of the hive in the lower story; but they had acquired such a habit of building those little bridge-combs they would not give it up until I scraped every bit of wax from the tops of the lower frames and the bottoms of the upper ones, and then greased the clean pine wood with a little butter on the end of my finger. That stopped it. The bees did not seem to find the butter particularly offensive, but they could not "make their putty stick," and so they gave it up. After I had got my hives well fixed in this manner, the combs in the upper story could be lifted out just as easily as those in the lower story.

Now, if you wish to avoid side fins and attachments you must see that your bees have room to build, and to store honey. Bees have such a fashion for comb-building

when honey is coming in that I am under the impression that every colony should be allowed to build some comb somewhere. Perhaps raising wax cells on sheets of foundation may be almost as good; but I do not think it is quite. Let them satisfy their natural instinct and nature by at least a little comb-building somewhere in the hive.

Now another thing: I very much prefer a hive that can be opened without any snap or crack of propolis. They began cementing the covers down almost at once; and where there was space enough for a queen-cage between the top of the combs and the light pine cover, they built fins of comb up against the cover. Making all the tops of the frames perfectly clean and smooth, and then buttering them as before, cured this. After I had them fixed so there were no projections at all in the way of wax or propolis above the top of the frames I cut some little sheets of enamel cloth just a little larger than the little hive each way. Now, if you have them a little larger it is going to bother you somewhat to have the edge turned up just a little on this enamel sheet *clear around*; but you can do it if you take time; and after it has been in that shape for a day or two you can take it off and put it back without a bit of trouble. It will shape itself, especially with the propolis the bees put around the outer edge. When thus arranged, when you want some honey for the table remove the cover, take hold of this enamel sheet by one corner, take it off the frames, bees and all, and set it down in front of the entrance. By the time you have cut out your chunk of honey for the table the bees will be about all off. When you lay it down on the top of the frames in closing up the hive, if there are any bees under it, just pass your finger along the top of the frames and the bees will get down out of the way. This takes a little more time than simply to lay on a cover; but I think the time is well invested; for your covers then come right off without any snapping or sticking. The wind can not blow the cover off, because the Neponset cap keeps it in place and keeps every thing dry.

Now, one or two such little hives out in the front yard, in the flower-garden, on the window-sill, or the porch, or even on top of your house, are not only things of beauty but a source of education and pleasure to every visitor—man, woman, or child—but it comes pretty near being a "joy forever," especially when honey is coming in every day; and up at our Michigan home, so far as my experience has gone, there is some honey coming every day in the year when it is warm enough for the bees to fly. Perhaps if I had a large apiary in that locality, such would not be the case. It seems to me I should like the fun of building up an apiary with those little hives and nothing else. When a colony gets too large for a two-story hive, let it swarm.

It has been suggested that the Caucasians have been given to too much swarming. Well, just now that would suit me all the better. If they keep on until there is only

a double handful of bees, that would be enough to raise a good queen and start to building up a colony. Whenever you want full-sized Langstroth frames so as to get big colonies, just put three little frames inside of one big frame, as has been so many times explained. I think these little hives every season would be good property to buy and sell. I do not know just what the expense is. I think a one-story hive, nailed up, is advertised at a dollar. A dollar more ought to furnish bees enough for a good start; and then you can put in any kind of queen you like. Of course, this hive is virtually the same thing as the Pearl Agnes hive; and I should not be surprised if these little hives, in connection with the gentle Caucasian bees, or a strain of gentle Italians, might prove to be a *new departure* in bee culture. Any one who felt inclined could make a start with two or three dollars. If for any reason he wants to give it up, there would be plenty of people to take them off his hands at cost or nearly that. With these little hives and gentle bees, little girls and boys might keep bees just as well as to have pet chickens or a pet dog or a kitten.

I almost forgot to add that in Northern Michigan, as well as in Cuba, the Caucasians were away ahead of the hybrids in gathering honey. As I had only one colony of hybrids, however, perhaps the test was not quite a fair one. Just before dictating this article I went down to our own apiary here in Medina, and had Mr. Wardell show me the colonies that came from queens raised early in the spring from our apiary in Florida. He agreed with me that they were fully *equal* as honey-gatherers to the Italians; and so far as we could determine they seemed, if any thing, to be rather superior. When the Caucasians were building up nicely, without any feeding whatever, we have been doing considerable feeding among some of the Italians which we wanted to build up rapidly.

address our Chippewa Lake Chautauqua on the 1st of August. I had heard something of Prof. Holden before. I think it was the *Rural New-Yorker* that said the "corn wizard" of Iowa had not only put American corn on the witness-stand, but that he had succeeded, after years of patient toil and study, in not only making the corn *listen* to his questions, but in making it give a definite and decided answer.

When I sat down to listen to Prof. Holden I had somehow gotten the erroneous impression that he had developed a new strain of seed corn, something in the way Luther Burbank develops new fruits, or is reported to have done so. But I was agreeably surprised in a good many ways. First, the speaker said we did not want to send off *anywhere* for seed corn—especially not to distant States. Get the best corn you can in your own immediate neighborhood. If you get seed corn more than ten or twenty miles from the locality where it has been grown for years it seems to get homesick. The thing the farmer has to do to double his corn crop must be done in his own home on his own farm; and his own children and good wife are to do it or help to do it. Prof. Holden reminded me vividly of Prof. Cook, especially when he used to give his talks at the Michigan Agricultural College. If I shut my eyes I could almost think it was Prof. Cook who was talking. He is a rather small and slim man; but his face just beams with overflowing good nature and enthusiasm. I listened to his talk something over two hours; and although it is hard work for me ordinarily to listen to any discourse an hour long, I think I could have continued to listen until dark, going without my supper without a thought of it. He was, of course, cheered and encoored all the way through; and more or less questions were "fired" at him all the time. His whole audience of four or five hundred caught his enthusiasm; and, oh how he did improve the opportunity to crowd home great and important truths! His address was a home talk if there ever was a home talk. It caught hold of the women and children just as it caught hold of the men; and every little while, for fear some important matter would be overlooked or forgotten, or might slip from the memory, he would stop and say, "Now, look here, friends, you are not listening. This is a matter of exceeding importance. If you do not listen intently to every word I say, you will let a cog slip, and your work will go all to pieces."

Prof. Holden got into Medina Co. one day in advance; and just as soon as let loose he began rambling over the cornfields in our region. Then he visited our experiment station at Wooster; and, oh how he did "roast" the stupid farmers who live within easy access of our experiment station, and yet never go there to see what is being done! He had the platform where he spoke loaded with stalks and hills of corn that he had pulled up in adjoining fields. The table and chairs were loaded with specimens of ears of



Whatsoever a man soweth, that shall he also reap.
—GAL. 6:7.

Give us this day our daily bread.—MATT. 6:11.

Dear friends, this Home paper ought to be one of the most valuable that has ever come from my brain; and the more valuable because it is *not* the production of my own brain. It belongs to the man "whose brain has increased the corn crop of Iowa about 50,000,000 bushels yearly." You see I have put the above in quotation-marks. That is because I took it from a little handbill announcing that Prof. P. G. Holden would

dried corn. All along the stage were samples of products from Indian corn and cornstalks: a big chunk of india-rubber, samples of different kinds of sugar, all made from corn; and, finally, when he spoke of *maple molasses* made entirely from corn, there was a rather large manifestation from the audience.

Now may God help me to recollect, and tell in a way that will make it plain to you all, some of the grand truths our good friend and Christian brother (thank the Lord that he *is* a devoted Christian) gave us, as he tried to lift up and encourage the farmers and their boys—yes, farmers' wives and farmers' girls as well—in his talk. Besides the specimens that loaded down the platform and tables, he had wonderful charts hung up just back of him. I can not remember the statistics very well, and I did not think to put it down with my pencil; but the first chart that was hung up before us read something like this: "Value of the corn crop in Ohio, per annum, \$135,000,000; value of the hay crop of Ohio, \$115,000,000; wheat, perhaps \$90,000,000; potatoes, \$75,000,000;" and I must confess this was the first time my attention had been called to the fact that corn stood so far away above every thing else. Then other charts were unfolded. The speaker had been over our cornfields to see how many missing hills there were. Then he counted the hills that had only one stalk, those that had two, and those that had three stalks. Then he brought specimens and held them up before the audience—little spindling stalks from a foot high, all the way up to a stalk full height, perhaps without an ear of corn on it at all. He asked the audience what per cent the missing, small, and empty stalks probably made in our average cornfields. He did not discuss soils nor cultivation very much. I think it takes about four lectures to take up the whole subject. He gave us the most important one. Now, many farmers seem to have the idea that it is poor ground or lack of cultivation that is responsible for the small yield. A good many seem to think the lack of rain at just the right time is one of the troubles that can not be surmounted. Then he called attention to the fact that we have fields yielding big crops side by side of poor miserable crops of less than half a yield, with nothing but a wire fence between the two. Is it likely the raindrops stop just as they get up to that wire fence, and do not fall on the poor ground? Then he gave us a most pungent moral against shouldering the blame on the kind Father above. Why is it we have vacant hills—hills with little bits of stalks, and stalks that do not bear any corn? Prof. Holden said he was talking to a crowd of farmers not long ago, and a boy pushed his way up and looked as if he wanted to say something. Mr. Holden loves boys (and girls too) or he would not be the great man he is. After a little encouragement the boy got off something like this:

"Why, Prof. Holden, it looks to me as if there were a great lot of stalks in almost

every cornfield that just fool around all summer doin' nothin'."

This boy gave him the text for a grand sermon. He said it was not only *stalks of corn* that fool around all summer "doin' nothin'," but there are human beings just like the cornstalks. They live and die standing around "doin' nothin'" when God has placed such wonderful opportunities before them.

Now, then, friends, if it is not poor soil nor lack of cultivation, nor even a lack of rain, that is responsible for the large number of stalks of corn standing around "doin' nothin'," what is the trouble? It is largely *poor seed*. "Whatsoever a man soweth, that shall he also reap." Yes, I know you think you have the best seed; and when I told Mrs. Root about it she said her father always had the very best seed corn that could be produced. He picked out the ears before the corn was cut; watched them till they were just right, picked them, and hung them up in the garret where they would be thoroughly dried out before freezing could harm them. Yes, that is all very good—tip-top; but, dear me! it is not *half* of it. I wonder if I can explain the matter with sufficient emphasis so some boy or girl or mother, perhaps, or maybe some old farmer, will see the point and get right at it. Pick out your best ears, just as Mrs. Root's father did. Get them from the best field of corn in your vicinity, no matter what you have to pay for the privilege. But get enough ears—at least six times as many as you will need to plant. I think Prof. Holden told us six nice big ears would plant an acre. So you will want forty or fifty ears for every acre you wish to plant next season. Tie them up with strings, and hang them up in the driest room in your house where there is a good current of air passing through, so as to strike them on all sides. Tie a string around one ear of corn, then lay another above it; tie; another; tie, and so on. He said the women-folks would beat the men all out in tying up corn. Put about a dozen ears in each bunch, and hang it on a wire stretched across the room. Do not put it over a pole or any thing else that a mouse can walk on. Do not omit this part of it. About the middle of March lay these ears on a floor or table where they will not be disturbed. Push them up tight together, and drive a big nail between every ten ears. This is to prevent their getting out of place. Then pick up the ears one at a time, and with your knife pick out six kernels from each ear, going over the ears so as to make an average of the whole. Lay these six kernels at the butt of the ear of corn. With a pencil, mark opposite the nails—1, 10, 20, 30, 40, and so on; that is so you can number the ears of corn and number these little piles of corn. Now get a shallow box or tray two inches deep, large enough to give a space two inches square for every six grains of corn. As this tray is to be kept among the house-plants, and cared for just like the house-plants, he said it should be made of some nice clean boards, so the good

wife would not be ashamed to have it among her flowers. Get some old sawdust and soak it over night in water. Now do not forget and think *sprinkling* the sawdust will do just as well. It must be thoroughly soaked before it is put into that tray. Squeeze out the water until it holds just about as much as it will without dripping through on the floor. When it is packed down smooth and level in this box, spread over the sawdust a piece of white cotton cloth. This is first to be marked in squares about $2\frac{1}{2}$ inches across. These squares are to be numbered 1, 10, 20, 30, just like your ears of corn. After the cloth is patted down on top of the wet sawdust, place six grains of corn inside of each square. You see this will show you what ears of corn the grain in each square came from. On top of the corn that is placed on the cloth, spread another cloth; and on this a little mat or cushion filled with sawdust just like the other. Bundle it up well so as to keep it from drying out. The average farmer can tell you just about what amount of dampness is needed for that corn to germinate. Now keep watch. If the six grains in No. 1 all start at once, and send up a strong vigorous shoot, keep that ear of corn for seed, but not otherwise. Do not save a single ear that produces some kernels that failed to germinate or some that are even slow in germinating. It pays a tremendous big interest on the time invested in getting the very best seed, and in having every kernel that is planted in the field germinate strong and promptly. A corn plant that comes up a little behind the others will always be inferior. We can afford to give room to nothing but the very best. Yes, I know some of you big stout men will say this is too much fuss and bother. Prof. Holden looked so good-natured that you could not imagine he was ever "mad" in his life. But he said he did get mad only a few days ago. I think it was somewhere in the South where he was giving one of his talks, and a big pompous influential man came up and said something like this:

"Prof. Holden, I have enjoyed your talk immensely; but I grow several hundred acres of corn; and, of course, where we do things on a big scale like that, we can not afford to bother with such complications."

I do not know what Prof. Holden replied, but he said such talk just made him *mad*.

The average cost per acre for selecting seed corn, according to the way I have described, should not exceed *six cents*. Just think! only *six cents per acre*, and yet this simple little thing may raise the yield from 30 to 40 bushels per acre, up to 90 or even 100. It has been done over and over again. No wonder the farmers are getting wild and crazy over the corn crop in Iowa since Prof. Holden opened up this wonderful gold-mine; and it is a gold-mine. The average farmer—you, my friend, who are reading this—when you grow corn, if you have not got hold of this new wrinkle you throw away from three to five hours a day as the boy said of the cornstalks with no ears on them.

Your wife and girls fool away from three to five hours a day to get three good square meals for you, take care of your clothing so as to make you look decent, and then *you* fool away almost half of your time just because you did not remember our text and put it in practice.

Now, there is lots more that I can not tell you about here. When you are ready to shell these extra select ears, sort them out into three piles—the ears having the largest kernels, those having medium-sized kernels, and those having the smallest kernels. Do not get the different sizes mixed. You want your corn-planter to put just four grains in a hill. After your corn is shelled and ready to plant, spread it on a table, just one kernel deep; then get all hands to pick out broken or imperfect kernels. Do not let one get into the planter that is not of average size, and perfect in every respect. Do not grumble about the "fuss." It can all be done at a cost of six cents per acre where you put in several acres of corn.*

Now, the man who has been thus careful about his seed corn will be very likely to be careful about preparing his ground and taking care of his crop. His cornfield will be a standing object-lesson. I do not know that Prof. Holden said so, but he said a good many things along the same line, that this cornfield would be a standing object-lesson *to the glory of God*. The man who owns it will be a better man; his children will be better children, and his wife will be a better woman, and his neighbors around him will soon have a cornfield something like it. The boys and girls will get into a strife—that is, a friendly neighborly one—to see who will beat; and pretty soon the whole locality will be on "higher ground."

There is a lot more to tell about corn, and there is one thing that hits the bee-keepers. He held up one of his poor scrubby stalks of corn and said, "Look here, friends, these poor scrubs send up a tassel, even if they do not bear any corn. This tassel spreads out its arms and lets loose millions of pollen grains. If you think I am stating it too high, you set to work and count them as the breeze sets them floating in the air. These pollen grains fertilize the kernels of corn. In all we have been doing we have secured a good *mother* for our kernels of corn, but how much would it amount to to have the best kind of mother if you have only a "scrub father"—one of the kind that stands around all summer "doing nothin'"? And that hits the bee-keepers. We have got the good mother, and have the parentage worked down to something pretty fine; but up to

*Out in Iowa, where they are getting to be experts in this kind of work, a farmer succeeded in getting a whole big cornfield with 98 per cent of perfect stalks. Just think of the difference between this and the average per cent of stands throughout the cornfields of Ohio! He says: "Your average crop in this State is 29 bushels to the acre. Do you know that one twelve-ounce nubb'n to the hill will give a yield of 98 bushels to the acre? You raise an average of less than a nubb'n to the hill on the leading crop of your State. Do you know that two seventeen-ounce ears to the hill would give a yield of 117 bushels to the acre?"

the present date bee-keepers have done little or nothing about the scrub *fathers*. Yes, the drone-traps are all right; but how many use them? How many of us have got rid of every bit of drone-comb except in the hives where we want some drones reared?

A part of that wonderful prayer reads, "Give us this day our daily bread." I hope the friends realize what this little man with his zeal and enthusiasm has been doing to make the daily bread of the average farmer throughout the United States, and perhaps I might say throughout the world, a little *easier* to get hold of; and even if it be only "corn bread," instead of bread made from wheat, may we not thank God for the *corn bread*, and *more* still that he in his infinite goodness and loving wisdom permits such a man as Prof. Holden to *live* and *teach* throughout our land as he is doing now almost every day of his life. I have heard it rumored that Prof. Holden commenced as a poor schoolteacher in Northern Michigan. He thirsted for an education, and he was really obliged to teach school to get the necessary means to go on with that education. Nobody has said so, but I should not wonder if he has been at some time a pupil under Prof. Cook at the Michigan Agricultural College. I wonder if the rest of the world has given dear old Michigan credit for all she has done with that beautiful agricultural college, one of the first to help us *out of darkness and into the light*, and put us on "higher ground."

After page 1076 was printed I noticed that I gave the value of the corn crop for Ohio at \$135,000,000; but I have just come across the following clipping from the *Medina Sentinel*, the editor of which was present, and heard the corn-talk. You will notice there is a trifling (?) difference in our figures:

"Prof. Holden commenced his talk by declaring that, in Ohio, corn is king, just as much as it is in Iowa. The value of the crops of the State, distributed, is as follows: Corn, \$35,892,000; wheat, \$19,319,000; oats, \$15,914,000; potatoes, \$7,533,000; tobacco, \$1,063,000; barley, \$408,000. These figures give the corn crop a big lead, and a little figuring will show that even a ten-per-cent improvement in the handling of the crop and increase of the yield would add over \$3,500,000 to the pocket change of the farmers of the State."



SWEET CLOVER—IS IT A NOXIOUS WEED?

A notice appeared in one of our *Medina* papers recently in regard to the law or town ordinance requiring noxious weeds to be cut down along the roadside, and in the list of noxious weeds was included sweet clover.

We hear from other States that town and county officers are cutting down sweet clover, with the understanding that it is a noxious weed. I have submitted the matter to the director of our Ohio Experiment Station, and below is what Prof. Thorne says about it:

Dear Sir:—Replying to yours of yesterday I would say that Section 4730 of the *Revised Statutes of Ohio* requires the destruction along roadsides of briars, burrs, vines, Russian, Canada, and common thistle, and other noxious weeds. Section 4732 requests the destruction in fields of the Canada or Russian thistle, lettuce, or wild mustard. I find no reference anywhere to sweet clover as being a noxious weed; and the only way it could be included in that category would be by a judicial decision placing it under the general term, as mentioned in Section 4730, although I am not lawyer enough to warrant my opinion being taken as final. CHAS. E. THORNE, Director.

Wooster, O.

Our Ohio Experiment Station, and I think the stations belonging to other States, have several times declared that none of the clovers should ever be classed as noxious weeds; that they may be out of place in a strawberry-bed, like red clover, etc., but this does not warrant their being called noxious weeds. It would be simply a "plant out of place."

The following is copied from Bulletin 163, of our Ohio Experiment Station:

WARNING AGAINST FRAUD (BY C. E. THORNE, DIRECTOR).

The Ohio Experiment Station is in receipt of the following letters from Greene County: 1. "A man is traveling about this community claiming to represent the forestry department of the Ohio Experiment Station. After visiting and talking awhile with a farmer, he turns out to be a regular tree-agent, hailing from the nursery of J. K. Denby, Greenville, Indiana. He calls himself W. O. Walton, and offers trees for sale at \$20 per thousand for catalpa speciosa and 'North Dakota black locust.' He claims they raise all the trees which the Ohio Experiment Station sends out. Is this true? [No.] Is such a man connected with the Station? [No.] Is not \$20 per thousand an exorbitant price? [Two or three times their value.] Is it free from the borer, as he claims?" [No.]

2. "Has the State Forestry Commission, if there is such a commission, a contract or agreement with J. K. Denby & Sons, of Greenville, Indiana, to pay for 200 in every 1000 trees sold by said firm? Their salesman, W. O. Walton, has been canvassing this vicinity and making such claim."

Replying to the above we have to say that Ohio has no "State Forestry Commission," and that the Ohio Experiment Station once again recommends that any person who claims to represent this station in the selling of nursery stock be arrested and prosecuted for obtaining money under false pretenses.

We give place to the above because quite a number of our friends have written, asking us if the Experiment Station really indorsed this, that, and the other, mentioned in the above clipping. We heartily recommend the concluding sentence—not only have nothing to do with these swindlers, but take steps to have them arrested and punished according to law, in order that you may protect your fellow-farmers from being swindled.

"THE VINELESS-POTATO MAN."

We clip the following from a recent issue of the *Rural New-Yorker*:

A few of the farm papers denounced the humbug, until the Post-office Department took it up. After consulting with the Agricultural Department, a fraud order was issued and the vineless-potato man is debarred from the mails. That serves him right; but

what about the agricultural papers that printed the advertising and pocketed the proceeds? They knew from the first that the thing was a humbug!

It transpires that even some of the bee-keepers and honey-men have got bitten by this ridiculous fraud. I should suppose that any man who had ever been on a farm would know better than to be taken in by a statement that potatoes can be grown without tops or green leaves. Why, they even had the cheek to want us to accept an advertisement of the thing in GLEANINGS. Did you ever!

SPRAYING POTATOES FOR LATE BLIGHT AND CONSEQUENT ROT.

The following is just at hand from our Ohio Experiment Station:

The late blight or rot fungus of potatoes, *Phytophthora*, has appeared about Wooster, Ohio, following the rainy weather. This same fungus appeared at Wooster, August 15, 1904, and July 25, 1905; the fungus has just been collected by the Botanist of the Ohio Experiment Station, in abundance, in fields near the Station, August 9, 1905. This late blight is liable to be followed by rot.

The late blight and rot may be prevented by thorough spraying with Bordeaux mixture, made of 4 lbs. blue vitriol and 4 to 5 lbs. of lime in 50 gallons of water, if treatment is prompt. Such spraying should be repeated at seven to eight day intervals till crop is mature. Some growers gained one-third to one-half increase of crop by spraying from this time forward, in 1905. Such treatment is now again recommended.

Inquiries and applications for bulletins, spray calendar, etc., may be addressed to the Ohio Experiment Station, Wooster, Ohio.

THE UNION BUGGY CO., OF PONTIAC, MICHIGAN.

We regret to be obliged to announce that the above firm has turned over its affairs to Chester R. Freeman, trustee. The company has written us, and we have also a letter from Mr. Freeman, who states:

Dear Sir:—I have this day accepted the trusteeship of the Union Buggy Company, and they have turned over to me all of their assets. As soon as I am able to render a statement of the condition of the company I will do so. In the mean time I shall continue to conduct the business for the benefit of the creditors.

CHESTER R. FREEMAN.

Pontiac, Mich., July 30.

Now, this same buggy company gave us an advertisement a year ago. They paid us promptly for their advertising, and no complaint was ever made concerning their method of doing business. Under the circumstances I think we were excusable for accepting their advertisement this season, even though we found them quoted rather low as a buggy factory. At the present writing, only one complaint has reached us; but the company has not sent the goods ordered nor

returned the money sent for them. At present they owe us \$48 for advertising in April and May this season. We hope no one will send them any more money after receiving this notice.

JOSEPH HORNE CO.

Pittsburgh, Penn.

A Note to Needleworkers!

Women who do fancy work will be interested in this news. Our Art Needlework Department is under the supervision of a lady who is known as an authority on needlework in this country—a graduate of a famous European Fancywork school.

Consequently you can count upon our supplying you with every thing for fancywork, embroidery, and lace-making.

Ladies' Corset Covers, stamped for eyelet embroidery—on sheer nainsook—materials included for working—also paper pattern; 50c for outfit.

"Home Sweet Home" pillow-top—beautifully tinted on art ticking, ready to embroider, 25c.

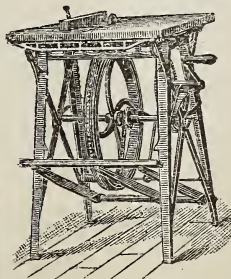
Porch Cushion-covers and Pillow-tops—tinted ready for use; a large variety of designs—15c.

Address M. O. D. Department

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kept in stock; none better. DITTMER'S foundation and all kinds of bee-keepers' supplies sold right. Thousands of shipping-cases, 24-pound, 13 cts.; fancy white basswood, 16 cts, HONEY and BEESWAX wanted. Send for free list, and save 20 per cent on your order.

W. D. Soper, Route 3, Jackson, Michigan



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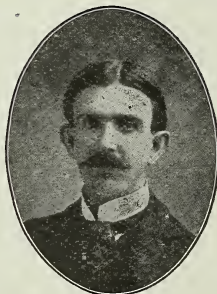
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You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEEES and QUEENS.—Your orders will be attended to.

The A. I. Root Company

H. G. ACKLIN, MANAGER

1024 Mississippi Street, St. Paul, Minn.

DO YOU KNOW

That the sale of Dittmer's Foundation has increased so much that we were forced to double our melting capacity in order to fill orders promptly?

There is a Reason for This

It is because Dittmer's Foundation is tough, clear, and transparent, and has the natural color of beeswax.

AGENTS FOR DITTMER'S FOUNDATION:

W. D. Soper.....Jackson, Mich.
Bee and Honey Co.....Beeville, Texas
E. H. Taylor.....Welwyn Sta., Herts, Eng.
E. Grainger & Co.....Toronto, Ont., Can.

Our warehouse is well stocked with all kinds of bee-keepers' supplies.

Beeswax always wanted.

Gus Dittmer, Augusta, Wis.

BEE-SUPPLIES

We manufacture every thing needed in the apiary, and carry a large stock and great variety. We assure you the best goods at **LOWEST PRICES**, and our excellent freight facilities enable us to make prompt shipment over fifteen different roads, thereby saving you excessive freight charges as well as time and worry in having goods transferred and damaged. We make the Alternating, Massie, Langstroth, and the Dovetail hive.

Our prices are very reasonable; and, to convince you of such, we will mail you our free illustrated and descriptive catalog and price list upon request. We want every bee-keeper to have our catalog. **SPECIAL DISCOUNTS** now. Write to-day. Address

Kretschmer Mfg. Co., Council Bluffs, Iowa.

Muscatine Produce Co., Muscatine, Iowa.
Trester Supply Co., Lincoln, Nebr.

Shugart-Ouran Seed Co., Council Bluffs, Iowa.
T. B. Vallette & Son, Salina, Kansas.



Michigan Distributors

—FOR—

**G. B. Lewis Co.'s Beeware,
Dadant's Foundation.**

With an enormous stock, and the best shipping-point in Michigan, we are in a position to give you the very best service.

ADVANCED BEE-VEIL. Cord arrangement, absolutely bee-proof, best on earth. Made of imported French tulle veiling. Cotton, with silk face. **50 CENTS, POSTPAID.**

A. G. Woodman Co., Grand Rapids, Mich.

Dear Sirs:—Your advanced bee-veil just arrived, and is, as advertised, the best on the market. Find enclosure for ten more veils. Plattville, Wis., April 14, 1906. N. E. FRANCE.

**A. G. Woodman Co.,
Grand Rapids, Mich.**

Beeswax Wanted.

We Manufacture

the finest, whitest, no-drip basswood SHIPPING CASE on the market to-day. Covers and bottoms are of **ONE PIECE**. Everything is **POLISHED** on both sides, and a better case can not be had at any price. We can furnish them in single or carload lots to fit any number or style of section. Large quantities of all the standard sizes on hand. . . . As a special offer we will sell you 25 cases to hold 24 sections, complete with **NAILS, PAPER, and GLASS** at \$4.00. Write for prices on larger quantities. Furnish corrugated paper if desired. We can furnish you with any thing you need in the apiary. Our catalog is free. . . . **PROMPT SHIPMENT and SATISFACTION GUARANTEED.**

Minnesota Bee-supply Company
Niccollet Island, No. 20, Minneapolis, Minnesota

**Bee Supplies. Lewis' Goods at
Factory Prices.**

Best of everything the bee-keeper needs. Large and complete stock. Fine Italian and Caucasian queens. Prompt service. Catalog free. Get our prices before ordering.

C. M. Scott & Co., Indianapolis, Indiana
1004 East Washington Street

Established 1881

YES!

Same Place 1906

THIS IS THE MAN

WHO HAS HANDLED ROOT'S GOODS ALL THESE YEARS

and is now selling at wholesale and retail at Root's catalog prices. He has carloads of the finest sections, of all kinds and sizes; the Danzenbaker hive, the best single-walled comb-honey hive in use; all kinds of single-walled hives shown in catalog, and supers that match; the Hilton double-walled hive, of which more are used in Michigan than any other. It has stood the test for thirty years. We can't name them all, but send for his 86-page illustrated catalog, and that will tell it all and give prices. Cash or goods in exchange for beeswax at all times of the year. ♀ ♀ ♀ ♀ ♀

Geo. E. Hilton, - Fremont, Mich.

BINGHAM

Original
Direct Draft
CLEAN
Bee Smokers



Pat'd 1879, '82, '92 & 1903

Pretty Recognition

A lady to whom I sent a Smoke Engine to order per mail sent this delicate recognition, "I am pleased," and signed her name.

We have made hundreds of thousands of smokers in the last twenty-eight years. They always please and last; don't spit fire; don't go out; don't *dab* themselves all over. We are the most extensive *exclusively* bee-smoker makers in the world.

T. F. Bingham - Farwell, Mich.

Chico, California, October 28th, 1905.

Dear Mr. Bingham:—Enclosed find money-order for a honey-knife and smoker. I can't do business without a Bingham Smoke Engine.
J. M. RANKIN.

Third

Photo Contest

We want bright interesting photos to illustrate GLEANINGS. Send in those you think suitable, and you will stand a chance of one of the prizes below.

PRIZES

Class A.—Photos of general interest, excluding swarms and apiaries. Prizes: First, \$5.00; second, \$3.00; third, \$2.00; fourth, A B C, cloth.

Class B.—Photo of swarms. Prizes: First, \$3.00; second, \$2.00; third, A B C of Bee Culture; fourth, GLEANINGS one year.

Class C.—Photo of apiary. Prizes: First, \$3.00; second, \$2.00; third, A B C of Bee Culture.

Special.—Photos that do not win prizes but which we can use will be awarded a prize of \$1.00 each.

CONDITIONS

Contest closes November 1st.

All photographs should be marked "For Contest," and have name and address attached. Prize-winning photos become our property. No photo returned unless stamps are sent. We prefer unmounted prints toned to a light-red-dish color on solio paper.

The A. I. Root Company

Photo-contest Department
Medina, Ohio, U. S. A.

Swarthmore Books!

BABY NUCLEI (2d ed.)—The second edition of this popular treatise is off the press. This book thoroughly covers the field of small mating under management. The experience of twenty years in mating young queens in baby nuclei is given. A delightful little book—good printing, enjoyable reading, and easy understanding. Price 25 cts. postpaid.

SIMPLIFIED QUEEN-REARING.—A revised edition of this book just out. It tells the honey-producer how to rear queens by the very simplest method ever published. Good queens for little money and little trouble, in just an effective and economical plan for the bee-keeper who works for profit. Price 25 cts. postpaid.

INCREASE.—Don't depend entirely upon swarming for your increase. It's too slow and uncertain. Swarthmore tells of a way in his delightful little book entitled "Increase"—a natural way, simple and safe, no labor, little trouble. Colonies formed on this plan will work like prime swarms, and store a surplus. Price 25 cts. a copy postpaid.

CELL-GETTING.—The plan that has revolutionized queen-rearing throughout the world. The entire process is fully explained and illustrated by photos from actual life. Price, postpaid, 50 cts.

SWARTHMORE QUEEN-REARING TOOLS.—Complete outfits or separate parts. Write for price list.

FOR SALE BY

The A. I. Root Company

ALL BRANCHES AND AGENCIES

BANKING BY MAIL

Depositors in all parts of the country find our method of sending deposits by mail satisfactory in every way, for the reason that they not only receive

4 PER CENT INTEREST

but they obtain the greatest safety by having their money in the care of a responsible and safe banking institution.

Our booklet describes our methods and management, and explains the advantage of our simple banking-by-mail system. Write for the booklet to-day.



MEDINA, OHIO

A. T. SPITZER, Pres. A. I. ROOT, Vice-pres.
E. B. SPITZER, Cashier.

BEE-KEEPERS OF NORTHERN NEW YORK

Buy your shipping-cases, etc., of

A. H. Reeves, Perch River, Jefferson Co., N. Y.

and save freight charges, and time.
A complete stock on hand ready for shipment. Comb honey wanted in no-drip cases; also beeswax. . . .

CARNIOLANS our SPECIALTY

WE HAVE been breeding this wonderful race of bees for over twenty years, and during all this time we have been making very careful selections, and we now claim to have one of the best and purest races of Carniolan bees in this country.

They are very gentle, hardy, and prolific; the best of workers; they come out of winter quarters healthier and stronger in bees; they build up very rapidly in the spring, are great comb-builders, and their sealed combs are of snowy whiteness.

Also Breeders of Golden and Leather Italians

No foul brood or other bee-diseases here. Bees and queens guaranteed to arrive in good condition at your postoffice in the United States or Canada. Descriptive price list free.

PRICES.—Untested queen, 75c; six, \$3.90; doz., \$7.00. Tested, \$1.25. Best breeding, \$2.50. Best imported,

F. A. Lockhart & Co.,

PENNSYLVANIA

Ours is the largest bee-supply house in the western half of the State. Every thing which the bee-keeper will need is in stock awaiting your order.

ROOT'S GOODS

AT ROOT'S PRICES

You can save time and expense by ordering from us. .

Best shipping facilities. .

Complete stock.

Do not put off ordering to-day what you will urgently need a little later on in the season.

Frank W. Prothero

Successor to Prothero & Arnold

Dubois, Clearfield Co., Pennsylvania

Something New in Honey-jars...

Cook's Square Jar combines a new feature that improves the package and reduces the cost, and is the best and cheapest 1-pound glass package made. Send for circular and full catalog of hives, bees, and useful implements. . .

J. H. M. COOK, 70 Cortlandt St., New York

The Oldest Supply-house in the East, and only Reliable goods sold. 10 cents brings sample jar by mail.

\$4.00. One L-frame nucleus, 75c; two L-frame nucleus, \$1.50; three L-frame nucleus, \$2.00. Add price of queen wanted to nucleus. Special prices quoted on large orders to dealers.

Banater Bees from Hungary

This wonderful new race of bees takes the lead over all other races, all points considered, that we have seen. The three colonies we are testing are strong in bees; do not offer to swarm; are great honey-gatherers; build snowy white combs, and are very gentle; in fact, no smoke is needed to handle them. They resemble the Carniolans in color, though somewhat darker. We have never seen a race of bees with so many desirable qualities. We shall breed a limited number of queens for sale, and have started a queen-rearing apiary five miles from other bees, and expect to have laying bees ready to mail by July 15. Price \$5.00 each. Pure mating and safe arrival guaranteed.

Lake George, New York

FAIRS

Why not make the fairs you attend profitable as well as instructive? Make a good honey exhibit and secure awards. Then use your time to advantage soliciting subscriptions to **Gleanings in Bee Culture**.

Gleanings makes very liberal inducements in regular commissions besides large cash prizes. This matter is worth looking into.

County and State Fair Contest

Prizes, \$10, \$5, \$3, \$2.

To induce bee-keepers generally to enter our Fair Contest we make the following very liberal prizes over and above the regular commissions earned. For the party sending the largest list of subscribers, \$10; for the second largest, \$5; for third largest list, \$3; for the fourth largest list, \$2; fifth to tenth, a cloth-bound copy of the A B C of Bee Culture. Subject to the following

CONDITIONS

First.—That subscriptions entered in contest are obtained at the fair on dates named in application below, or obtained as results of work during fair.

Second.—That yearly subscriptions may be either new or renewal taken at our regular rates. Two trial subscriptions (new names, 6 mos.) are equivalent to one year's subscription.

Third.—That contest closes Nov. 15th, and announcement will be made in Dec. 1st GLEANINGS.

Fourth.—That only one agent will be appointed for any one fair.

Fifth.—That advertising matter sent is to be carefully distributed to best advantage.

CUT HERE

Date.....

GLEANINGS IN BEE CULTURE, Medina, Ohio:

Fair Contest Department.

Please send agents' terms and enter my name as contestant in Fair Contest. Send to my address, at proper time, advertising matter which will aid me in obtaining subscriptions. I have read conditions, and agree to them.

Date of Fair..... Name.....

Name of Fair..... P. O.....

I can use.....sample copies of Gleanings. State.....

HONEY-JARS!

A neat package is a great help to the sale of your extracted honey. A glass jar is the favorite for many markets. Some retail trade demands one style and some another. We can supply you with what you want.

Simplex Honey-jars

This is a new jar with glass screw-top and rubber gasket fitted to the taper screw on jar, which seals absolutely airtight. We consider it the handsomest jar we sell for one pound of honey. Your honey in these jars is sure to attract attention and have a ready sale in any grocery.

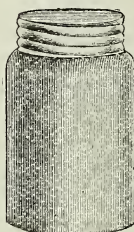
We are now prepared to offer Simplex jars in partitioned cases of two dozen each, ready to reship, when filled, at \$1.00 per case; ten-case lots or over, at 95 cts.; fifty-case lots at 90 cts. We can ship either from Medina, Chicago, New York, Philadelphia, and, after Sept. 1, from Mechanic Falls, Me.



SIMPLEX JAR

No. 25 Jars

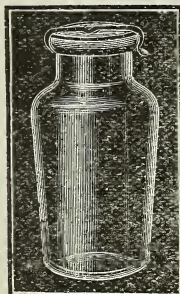
This is our standard jar—holding one pound of honey. We have sold this jar for years, and in larger quantities than any other honey-package we ever handled. It has opal cap with rubber ring and tin screw rim. Put up in re shipping-cases of two dozen. Prices same as Simplex jars quoted above.



NO. 25 JAR

Tip-top Honey-jars

This is a new-style jar sealed with a rubber ring under rim of a glass top held securely with spring-top fastener. This fastener is applied to a great variety of bottles and jars used for different purposes. We have selected two styles among them all as being most suitable for honey. The one and two pound square jars may be had with spring top fastening instead of cork at 75c per gross extra. We furnish in two sizes. Half-pound, 45c per dozen; gross, \$4.50. One-pound, 50c per dozen; gross, \$5.00.



TIP-TOP JAR

Tumblers

There seems to be an increasing demand for a cheap tumbler to put up a half-pound of honey to retail at 10 cts. We have secured a stock of such tumblers at a price which enables us to offer them at \$4.00 per barrel of 24 dozen. This is less than 1½ cts. apiece. For less than barrel lots we can not repack them for less than 25 cts. a dozen; or we will put them up 4 dozen to the case with partitions ready to reship when filled, at \$1.00 a case; 10-case lots at 95c.

Mason Fruit-jars

These are very largely used for canning fruit, and are often used for honey as well. As we buy them by the carload, we can make the following prices at Medina, all put up complete with porcelain-lined caps and rubbers, in cases of one dozen:

SIZE	Doz.	6 doz	12 doz.
Pint	\$ 52	\$3.00	\$5 75
Quart	55	3 10	6 00
½-gallon	75	4 10	8 00

Triumph wrench for Mason caps, 15c each; by mail, 25 cts.

Ball's waxed rings, better than rubbers, 5c dozen; postage 3c.

Sample Mailing-blocks

Price each, 6c; by mail, 8c. These are small wide-mouthed glass bottles, which hold ½ oz., with cork, put up in a mailing-block, with top which screws on and is easily removed.

Honey-labels

We print them in large and small lots; over fifty styles. Write for sample-book and prices.

Prompt Shipment

All of our branches and agents are well supplied. Write the one nearest you.

The A. I. Root Company, Medina, O.

BRANCH OFFICES IN THE UNITED STATES

44 Vesey St., New York City
144 East Erie St., Chicago

10 Vine St., Philadelphia, Pa.
Mechanic Falls, Me.
1100 Maryland Avenue, S. W., Washington, D. C.

1635 Genesee St., Syracuse, N. Y.
1024 Miss. St., St. Paul, Minn.

QUEENS

By Return Mail at the Following Prices for the Balance of this Season. Golden or Leather-colored Italian.

Our folks say that your queens are extra fine.

The A. I. Root Co., Medina, Ohio

We have good reports from your stock from time to time.

George W. York & Co., Chicago, Ill.

On every hand I hear good words of Quirin's queens.

B. S. K. Bennett, Los Angeles, Cal.

Your queens did finely. It was one I purchased last that gave me over 600 pounds of honey.

J. L. Gandy, Humboldt, Neb.

The breeder is surely a very fine one; her daughters do grandly.

Campbell & West, Hartstown, Pa.

I had a queen of you last year which produced bees that beat anything ever seen in this part of the country.

E. L. Messenger, New Haven, Conn.

The nuclei you sent J. A. Adams did just splendidly. Each colony stored at least 75 pounds of honey.

F. P. Merritt, 13 Breckenridge St., Lexington, Ky.

A few years ago I bought a queen from you which proved to be the best I had for years.

H. C. Shirley, Cashier of Liberty Bank, Liberty, S. C.

I have had the pleasure of seeing the results of your queens at Mr. George W. Stanley's apiary, at Scuffletown, Ky., and that is why I am ordering this half-dozen.

C. W. Brenner, Newburg, Ind.

I bought a queen from a neighbor last year who said he got her from you. She made me 193 sections of honey after July 4th—the best my other queens did was 64 sections.

C. E. Woodington, St. Anne, Ill.

With great respect I write to you in regard to your dealing and queens. If you want any references you can refer to me, as I can't recommend you too highly. Your queens are the best I ever saw. I have one hive of bees among my 45 colonies containing a queen from you that \$50.00 will not buy.

Morris Coon, Route 2, Locke, N. Y.

The two-frame nucleus you sent me was put in a hive May 25th. In July I brushed a swarm; had a swarm in August, and took off 75 boxes of honey. I consider this a wonderful record. I had four nuclei from different parts of the country, and yours was far superior to any of them. They are very gentle, easy to handle, hustlers to work. All bees and queens needed by me will hereafter come from Quirin-the-queen-breeder, Bellevue, O.

S. A. Peck, Box 124, Northumberland, Pa.

	1	6	12
Select queens	75	\$4 00	\$ 7 00
Tested queens	1 00	5 00	9 00
Select tested queens.....	1 50	8 00	15 00
Breeders	3 00	15 00	
Straight five-band breeders...	5 00		

Safe delivery and satisfaction guaranteed of all queens. Any queen not satisfactory may be returned any time inside of sixty days and another will be sent gratis.

Address all Orders to

Quirin-the-Queen-Breeder
Bellevue, Ohio.

Better than an Island

This place is just as good as an island for breeding queens, for there are no other bees within five miles, and so pure mating is guaranteed. It is better than an island when you order queens, for the fastest trains stop here, and hence queens are not away from the colony long enough to impair their usefulness. Safe introduction is guaranteed if you follow my special directions. The best bees known are the Banat Caucasians. The gentlest bees known are the Caucasians. The nicest bees known are the Golden Italians. Banat Caucasian queen, \$3.00; Caucasian queen, \$1.50; Golden Italian queen, 75 cts.

Dele Collins, Ph. D., Emporium, Pa.

Rose - Lawn - Queens

Experience the test of quality. Our patrons are pleased. A customer in Pennsylvania writes: "The Pure Gold queen you sent me has nine frames full of sealed brood. I would not take \$100 for her. Send me another like her."

From Indiana: "I have handled queens for twenty years, but the Golden you sent me is the largest, finest, and most prolific I ever saw. Please send me three more as soon as possible."

From Illinois: "I never saw bees work red-clover until to-day, when I counted more than twenty on red-clover blossoms in my yard. They came from the hive containing the Red-clover queen bought of you."

Untested queens like this, 75c. six for \$4.00; tested at \$1.00, six for \$5.00. Requeen now, and have plenty of early brood next spring. Catalog and sample workers on request.

Caucasians, Banats, Carniolans, Red Clover, and Golden Italians.

Rose Lawn Apiaries, Station C, Lincoln, Nebr.

Caucasian and Italian Queens by Return Mail

See July 15th ad. for prices.

D. J. Blocher - Pearl City - Illinois



**Fine, Young, Vigorous
ITALIAN QUEENS**

by return mail; untested only 45c.
or \$5.00 a dozen; tested, 65c.

J. S. FAJEN, Alma, Mo.

Quality Queens

Are the Best Italians yet.

Send for circular. ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀

H. H. JEPSON,

182 Friend St., - Boston, Mass.

1906 Italian and Caucasian Queens Price list now ready. Write **E. E. LAWRENCE, Doniphan, Mo.**

Queens from 50 Cents Up!

Bred from Root's Imported Italians.

Write for prices, stating wants.

C. M. Church, Arnold, Pa.

HONEY-JARS

No. 25, with burnished cap, heavy clear glass, per gross, \$5.00; 3 gross, \$13.50.

11-ounce nickel-cap jar, gross, \$4.00; 3 gross, \$11.00.

1-lb. square jar with cork, gross, \$5.00.

Heavy cartons, \$5.50 per M.

Italian queens, 75c.

Catalog free.

I. J. Stringham

105 Park Place, N. Y. City

Apiaries at Glen Cove, L. I.

COLLINGDALE APIARY

J. R. Rambo, Collingdale, Delaware Co., Penn.

Breeder of Caucasian and Golden Italian queens; Italians bred from stock received from Swarthmore; Caucasians bred from an imported queen. Queens reared and mated in separate yards, six miles apart. Satisfaction and safe arrival guaranteed. Prices furnished on application. I am booking orders now for the coming season, and will fill same in rotation as received.

Superior Queens!!!!

—Before June 15— —After June 15—

Italian and Carniolan

Untested.....	75c; \$8.00 per doz.	60c; \$6.50 per doz.
Tested.....	\$1.00; 11.00 per doz.	75c; 8 00 per doz.
Select Tested...	1.25; 12.00 per doz.	1.00; 11.00 per doz.

Caucasian

Untested.....	\$1.00; \$11.00 per doz.	75c; \$8.00 per doz.
Tested.....	1.50; 16.00 per doz.	1 00; 11.00 per doz.
Select Tested...	2.00; 20.00 per doz.	1.25; 12.00 per doz.

Write me a postal card for my circular.

Chas. Koeppen, Fredericksburg, Virginia

MOORE'S - STRAIN - OF - ITALIANS

as Red-clover Workers

W. T. Davison, Velpen, Ind., says: "When other bees are loafing, your bees go to work on red clover, and they seem to have a kind of get-up about them that the other bees don't have. They have never never failed to work on red clover, and many times I have found them on it when there was plenty of white clover."

Untested queens, 75c each; six, \$4.00; dozen, \$7.50. Select untested, \$1.00 each; six, \$5.00; dozen, \$9.00. Safe arrival and satisfaction guaranteed. Description circular free.

I am now filling orders by return mail, and shall probably be able to do so until the close of the season.

J. P. MOORE, Morgan, Pendleton Co., Ky.

MINNESOTA-BRED QUEENS.



Try our Northern-bred queens—nothing finer; three-banded and golden Italian queens, untested, 75 cts.; tested, \$1.50. Hardy and prolific. We want your orders, and will fill them by return mail, and guarantee safe arrival and satisfaction. Write for circular to

MENNIE & FENTON,
Pine Island - Minnesota.

Queens - Italian - Queens

and bees from Root's Red-clover stock and Golden Italian queens. Better than ever. Untested.....60c each; six, \$3.50. Selected untested.....75c " " 4.00. Tested.....\$1.00 " " 5.00. Selected tested.....1.25 " " 6.00. Two-frame nuclei with untested queen. 2.00. Orders filled in rotation. . Send orders to

E. A. Simmons, Greenville, Ala.

ITALIAN QUEENS

bred from best of honey-gatherers, either three or five banded or Golden races. Untested, 65c each, 3 for \$2.00, 6 for \$3.75, 12 for 7.25; tested, \$1.00 each, 6 for \$5.00, 12 for \$9.00; select tested, \$1.50 each; breeders, \$300 each.

J. W. Taylor, Beeville, Bee Co., Texas

Orders Filled Promptly by Return Mail

Queens from our fine strain of three-band Italians will not disappoint you. Bees are gentle, and the best of honey-gatherers. Queens are large and prolific, and every one guaranteed. Untested, 50c; \$6.00 per dozen. Tested, \$1.00.

J. W. H. SHAW & CO.

Loreauville, Iberia Par., Louisiana

The Best Stock

Nice three-banded Italians that are guaranteed to please, or money refunded. The Robey queens now go to nearly all parts of the globe. They are being used by many of the largest honey-producers of this and other countries, who pronounce them to be very superior strain of bees. I have spent 21 years in building up this strain of bees. Warranted purely mated, in any quantity, 60 cts. each; selected warranted, 75 cts. each.

L. H. Robey, Worthington, W. Va.

Untested Queens!

Golden Italian

75 cts. each; six for \$4.00; an extra fine one for \$1.00. Warranted purely mated and good queens. . . .

J. B. Case, Port Orange, Fla.

Italian and Caucasian QUEENS

A special discount is now offered on all queens and bees to be delivered before the close of the season of 1906. Pure stock, pure mating, and excellence of grade guaranteed. Address

Robert B. McCain, R. F. D., Yorkville, Ills.

DOOLITTLE & CLARK

will send CHOICE QUEENS the remainder of the season at the following prices:

Grade.	One	Three	Twelve
Untested.....	\$1.00	\$2 50	\$9 00
Select Tested.....	1 50	4 00	14 00
Tested (1905 rearing).....	2 50		
Select Breeding.....	5 00		
Extra Select Breeding.....	10 00		

Now is the Time to Requeen

Borodino, Onondaga Co., N. Y.

MOORE'S LONG-TONGUES and GOLDENS

Select untested queens, 75c; six, \$4.00; twelve, \$7.50. Tested, \$1.25; six, \$6.00. Twelve, \$11.00. Best breeders, \$2.50. Safe arrival guaranteed.

W. H. Rails, - - - Orange, Calif.

Red-clover and Italian Queens!



Average untested, 65c; two for \$1.00. Select untested, 75c. Fine tested queens, \$1.00 each. Four-frame nuclei, fine queen, in painted hive, \$3.75. Remember we guarantee our queens to work red clover as well as white clover. Get my circular.

Queens sent in rotation; 50 and 100 at special prices.

G. Routzahn, Route 3, Biglerville, Penn.

BEES and QUEENS

BY RETURN MAIL.

The Three-banded
Long-tongued Strain
of Italians.

We are breeding exclusively the above strain of bees, as from years of experience we consider them the best all-round bees that can be had. We have been making, from time to time, very careful selections for the following

Superior Qualities.

Honey-gathering, size of bees, non-swarming, docility, uniform markings.

Our selection of bees awarded diploma at the PAN-AMERICAN EXPOSITION for being the best bees there. And we guarantee them the equal of any bees anywhere at any price

Quality Our Motto.

1300 colonies to select from.

Untested queens..... 75c; 6, \$4.25; 12, 8.00
Select untested queens..... 1.00; 6, 5.00; 12, 9.90
Tested queens..... 1.00; 6, 6.00; 12, 11.50
Select tested queens..... 1.50
Breeding queens, \$3.00 to \$5.00.

Yours for best service,

The Victor-Knolle Apiary Co.,
Hondo, Texas.

Golden Queens.

My goldens are yellow from tip to tip. Every queen is worth a dollar, but I have a large number of them and offer them cheap. One, 65 cts.; 3 for \$1.95; 6 for \$3.75; 12 for \$7.50. No finer or better queens can be had at any price. They are reared right. Have had 35 years' experience in rearing queens. I insure satisfaction in every particular. Try at least one of my all-golden queens, and see how promptly I can serve you. Send for circular. It's free.

Daniel Wurth, 1111 North Smith St., San Antonio, Texas

Boston Headquarters

— FOR —

Bees-Queens-Supplies

H. H. Jepson - 182 Friend St.

Italian Queens of - the - Purest - Strains

I offer this race of queens, bred from select red-clover and five-banded breeders, at the following prices:

Untested, 75c; select untested, \$1.00; tested, \$1.50; select tested, \$2.50. I will guarantee safe arrival and satisfaction.

H. M. PARKER, Jr.

James Island, South Carolina

Same Old Place

is where you get the best of queens; untested. \$1.00; \$4.25 per 6; \$8.00 per dozen. Tested, \$1.50; best breeders, \$5. Absolute satisfaction and safe arrival guaranteed. Carniolans, Cyprians, Holy-Lands, Italians.

The JENNIE ATCHLEY CO.

Box 18, Beeville, Bee Co., Tex

Golden-All-Over ITALIAN - QUEENS

I have a few choice untested Golden-all over Italian queens, reared from Pratt stock, by Pratt's methods, and will be able to supply a limited demand for balance of the season at 75c each.

Wm. A. Shuff, Philadelphia, Pa.
4426 Osage Ave.

SUPERIOR STOCK.

I make a specialty of long-tongued Italian red-clover honey-queens. Untested queen, 75 cts. each; ½ doz., \$3.00; tested, \$1.00; ½ doz., \$5.00. Bees for business is my motto.

FRED. LEININGER, Ft. Jennings, O.

Yellow from Tip to Tip!!!

My Adel bees and queens are very handsome. Every queen a breeder, and guaranteed to produce golden queens and beautiful bees; non-swarmers, very gentle, and hustlers for honey. Each queen, \$1. Catalog ready.

H. ALLEY, - - Wenham, Mass.

When a Thing Needs Doing

NO *if* is the time to do it. How about those worthless queens? Will you tolerate them for another season, when the best of stock can be obtained so readily? Laws' bees and queens are bringing the best of reports. I could fill many pages of testimonials, but give you only one. Mr. T. P. Robinson, of Bartlett, Texas, says:

"Dear Sir.—The car of bees shipped June 20th are now all safely landed, and I have overhauled the entire lot. The bees are from 25 to 40 per cent better than contract, and you ought to hear my wife's exclamations of delight at seeing those fine yellow bees so quietly nestle between the combs at the very approach of smoke. I can certainly recommend you."

Leather and Golden Italians, Holy Lands, and Carniolans—single queen, \$1.00; six for \$5.00. Quantity lots, prices on application.

I also manufacture the Hoffman frames, both new and old style, at \$16.00 per M; single-story eight frame hive complete, 75c; 1½-story for extractor, \$1.00. Price list on application.

W. H. Laws, Beeville, Bee Co., Tex.

Caucasian - and - Italian Bees and Queens

Mr. Walter S. Pouder, Indianapolis, Ind., June 30, 1906, writes: "Friend T., queen arrived to day in good condition. I consider her a very choice specimen of the Caucasian."

Mr. Frank G. Odell, Lincoln, Neb., writes: "The yellow Caucasian queen you sent us is an unusually fine queen and very prolific. We are very much pleased with her."

I can send such queens for \$3.00 each by return mail. Send for circular and price list.

A. E. Titoff, Ioamosa, Calif.

Red-clover Queens from Westwood Apiary

will convince you of their superiority over all others. One, two, and three frame nuclei a specialty; also full colonies. Price list sent on application.

Henry Shaffer Westwood, Ohio

Wants and Exchange.

WANTED.—Bee supplies in exchange for 300 colonies bees. Ad. elsewhere. Manufacturers write if interested. LEO F. HANEGAN, Glenwood, Wis.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—To book your order for an untested clover queen (next spring delivery) and GLEANINGS one year for \$1.00 W. T. CRAWFORD, Hineston, La.

WANTED.—To rent or sell good fruit and berry farm with or without apiary; good markets; soil unsurpassed and good location for bees. A. E. WOODWARD, Rt. 1, Rexford Flats, N. Y.

WANTED.—Sealed bids for any part of two carloads of hives and supplies located at San Antonio, Texas. The right reserved to reject any and all bids. If not sooner disposed of, the whole lot will be sold at auction, piece-meal, during the next session of the National Bee-keepers' Association, San Antonio, Nov. 8, 9, 10. W. H. PUTNAM, River Falls, Wis.

Help Wanted.

WANTED.—Good man—married, without children preferred—to run farm of 52 acres near Bristol, Tenn.; ideal location, good profits from poultry, etc.; will make good offer to right party. Place for sale if can not find man. M. D. ANDES, Bristol, Tenn.

WANTED.—Hustling helper in the bee and honey business. A steady job for the right man. B. WALKER, Clyde, Ills.

For Sale.

FOR SALE.—400 acres choice citrus fruit land. ALBERT GUNN, Céspedes, Camaguey Prov., Cuba.

FOR SALE.—Bees and bee-supplies. J. GOBELI, Glenwood, St. Croix Co., Wis.

FOR SALE.—400 colonies pure Italian bees in lots to suit. Write for prices. F. A. GRAY, Redwood Falls, Minn.

FOR SALE.—Bee-keepers' supplies. Root's goods. Root's prices. Free catalog. F. R. DANIELS, 117 Florence St., Springfield, Mass.

FOR SALE.—My apiary complete in the great irrigated alfalfa belt; no failure yet. See GLEANINGS of Dec. 15, 1903, page 1051. C. K. C., Lovelock, Nev.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1906 send your name and address to FRANK S. STEPHENS, (Root's Goods.) Paden City, W. Va.

FOR SALE.—275 colonies of bees in good condition. Also can locate you on first-class homestead claim under Gunnison tunnel, one of Uncle Sam's biggest reclamation projects. Address Box 782, Montrose, Col.

FOR SALE.—170 colonies of bees in eight and ten frame hives; honey-house on wagon, uncapping-tank, honey-tank, four-frame extractor; mare, colt, horse, cow, 200 chickens, 10 acres of land with improvements. Rt. 3. MRS. T. HARRIS, Visalia, Cal.

FOR SALE.—First-class second-hand 5-gallon honey-cans, two in the case. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

FOR SALE.—600 stands of bees in first-class shape for comb honey, in four yards, two to four miles from town; good house at each yard; in sweet-clover and alfalfa belt; no failure in seven years, and under big Gunnison Tunnel project. Reason for selling, poor health. Address Box 772, Montrose, Colo.

FOR SALE.—Caucasian untested queens now at \$1.00 each, \$10.00 doz. W. T. LEWIS, Lewisburg, Miss.

FOR SALE.—One dollar pays for three queens, red-clover strain, balance season. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—500 lbs. yellow-sweet-clover seed for sale; also 200 lbs. white. R. L. SNODGRASS, Gordon, Kan.

FOR SALE.—Queens. I breed a superior strain of fine golden-all-over Italians. Untested, 75¢; tested, \$1.00. T. L. McMURRAY, Ravenswood, W. Va.

FOR SALE.—Second-hand 2-h.-p. boiler and engine; cost \$150, will sell for \$75. J. W. UTTER, Amity, Orange Co., N. Y.

FOR SALE.—50 full colonies of Italian bees in 10-frame Root Dovetailed Langstroth hives at \$3.00 each EARL BAKER, 3309 Monroe St., Sta. B, Toledo, O.

FOR SALE.—Thirty-five colonies extra-fine Italian bees (young queens) in Danz. hives, in fine condition, for \$4.00 per colony; will not sell in less lots than ten. M. C. LONG, 421 Cypress, Kansas City, Mo.

FOR SALE.—Seeds of honey-plants—seven-head turnips, motherwort, catnip at 5¢ a package, postpaid. still a few sections at reduced price; 24-lb. shipping-cases, complete, 14¢. H. S. DUBY, St. Anne, Ills.

FOR SALE.—Special sale of sections—Wisconsin basswood—equal to the best, No. 1 \$4.20; No. 2, \$3.70. Root Dovetailed and Danz. comb-honey hives, and all kinds of supplies on hand. Italian queens and bees. H. S. DUBY, St. Anne, Ills.

FOR SALE.—500 colonies of bees located in the best sweet-clover belt in the U. S. Will take \$1500 for the outfit. Reason for wanting to sell, too much other business. If I do not sell shall want a good man to run them next season. W. N. CANNON, Greenville, Ala.

FOR SALE.—\$1000 annual income can be made from my two-acre strawberry and truck garden, with 35 colonies of bees in this city; a large house, extensive waterworks; an elegant home. Price \$5000. J. NIPE, De Funiak Springs, Fla.

FOR SALE.—Angora and Persian cats; mostly all colors. Persians pure white with blue eyes. Everybody admires these beautiful pets. Women make money raising them. Good profits. Cats and kittens for sale at moderate prices. Also have ferrets for sale. Send stamp for circular. MRS. J. F. SKEES, Marion, Ohio.

Poultry Offers.

FOR SALE.—Choice poultry. Ten leading varieties for the farmer or the fancier. Circulars free. A. H. DUFF, Larned, Kan.

FOR SALE.—Alger's rose-comb Brown Leghorns hold the world's record; first at Chicago International, St. Louis World's Fair, expositi on at Portland, Oregon. Italian bees—Root strain direct. Flemish Giant hares, very large. Red Belgians from 16-lb. buck. Get circulars. FRED ALGER, Wauku, Wis.

Blacks and Hybrids.

Notices in this column are inserted free, and the publishers assume no responsibility for sales made. We believe, however, that every advertiser will do just as he promises.

FOR SALE.—A few young hybrid queens at 20¢ each. O. F. SNOW, East Dennis, Mass.

FOR SALE.—I will supersede 10 or 12 hybrid and second-season Italian queens this month, and offer them to any one at 25¢ each. Some of them are excellent. E. E. CROSS, Ravenswood, W. Va.

Convention Notices.

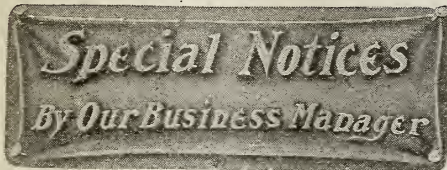
SIOUX CITY INTERSTATE FAIR.

Bee-keepers expecting to send an exhibit to the Interstate Fair (Iowa, Minnesota, South Dakota, and Nebraska) at Sioux City, Sept. 10-15, are requested to advise the superintendent of this department on or before Sept. 1.

On Thursday and Friday, Sept. 13, 14, there will be a bee-keepers' convention afternoon and evening of each day.

Vermilion, South Dak.

R. A. MORGAN, Supt.



HALF-POUND TUMBLERS.

After the notice in July GLEANINGS regarding these tumblers we found that it would make a much more symmetrical package to pack 4 dozen in a case instead of 3 dozen. Therefore we have not put up any 3 dozen to the case, as we at first proposed, but we put 2 dozen in a tier and two tiers to a case, making a package practically the same size as the case containing two dozen Simplex jars, and uniform in price with that. It also holds the same quantity of honey, and may be sold at the same price per case, filled. We include also parchment-paper disks of the right size to place over the tumbler before putting on the cover, which makes a tight seal. Price \$1.00 per case; 10 cases at 95 cts. for either the ½-lb. tumblers, Simplex, or No. 25 pound jars.

PRICES FOR THE COMING YEAR.

The cost of materials entering into bee-keepers' supplies has advanced during the past year from 5 to 20 per cent. The average advance is about 10 per cent. Compared with prices two years ago the advance is not quite so much on some lines. Pine lumber has never before reached as high a point as during the past eight months. For some of our stock we have paid 20 per cent more than a year ago, and the average advance is about 12 per cent.

Basswood lumber has been lower than it was two years ago, but the price is back up again, very nearly to where it was. The advance in tin plate and steel is about 10 per cent, while in pig tin, lead, and zinc the increase has been greater. Beeswax is a trifle higher than it was a year ago.

Last year we reduced the price of comb foundation two cents a pound, and gave a more liberal early-order discount than usual. This year we have already announced some reduced prices on honey-packages where we have a large surplus stock and have secured favorable prices on fresh supplies.

As we have a large surplus stock of No. 2 plain sections we have marked the price of these down 25 cts. per 1000. Aside from these few changes the same retail prices will be continued for the coming year. We may have to increase somewhat our wholesale and jobbing prices on some items to save us from loss in view of the increased cost of materials.

We reduce the early-order discount to what it was two years ago—namely, 7 per cent for cash order, before Oct. 1, and cutting off one per cent a month as the season advances.

REVISED PRICE OF PLAIN SECTIONS.

For the coming season we will furnish 4¼x4¼x1½, 4x5x1½, and 3½x5x1½ plain, or no-beewax sections, as follows:

1000, No. 1, \$4.75;	No. 2, \$4.00;
2000, No. 1, 9.25;	No. 2, 7.75;
3000, No. 1, 13.50;	No. 2, 11.25;
4000, No. 1, 17.50;	No. 2, 14.50;
5000, No. 1, 21.25;	No. 2, 17.50;
10,000, No. 1, 40.00;	No. 2, 32.50.

Our No. 2 grade of sections is superior in workmanship to what any of our best sections were made 15 or

20 years ago, or to the best sections put out to-day in some factories where they lack skill and experience in this very delicate piece of workmanship. We will continue this reduced price on No. 2 only as long as we have a surplus stock of this grade; and if many who now use No. 1 realized how good these No. 2 grade sections are, the surplus stock would not last many months.

EARLY-ORDER DISCOUNTS.

The discount for early cash orders this year will be:

7	per cent for cash with order before Oct. 1.
6	" " " " " " Nov. 1.
5	" " " " " " Dec. 1.
4	" " " " " " Jan. 1.
3	" " " " " " Feb. 1.
2	" " " " " " March 1.
1	" " " " " " April 1.

The discount will not apply to tin and glass honey-packages, scales, glass, paint, bushel boxes, hot-bed sash, labels, printing, comb-foundation machines, books, and other special or miscellaneous goods except where a few such items not exceeding ten per cent of the entire order, are included in a general order. The discount is intended to apply to hives, frames, sections, comb foundation, section-holders, separators, extractors, smokers, shipping-cases, zinc, and miscellaneous implements used in bee-keeping ordered early for use the following season, and only when cash accompanies the order, or is paid before the dates named.

Special Notices by A. I. Root.

WANTED—SWEET-CLOVER SEED.

If you have any, or can get any, please tell us how much and what you want for it. The demand is at present greater than the supply; and under the circumstances we can not well tell what we shall have to pay for it or what we shall be obliged to sell it for. Let us know as soon as possible how much you can furnish, and how low you can furnish it. The yellow is usually worth about a half more than the white.

A NEW EDITION OF OUR BOOK ON TOMATO CULTURE.

After several months of hard work a second edition of our Tomato Culture is just off the press. By the way, the book hardly ought to be called a treatise on tomato culture only, for of its 138 pages, 60 are devoted to tomato culture in the South; 26 to tomato-growing for canning-factories; the remaining 69 pages are by your old friend A. I. Root, and they have more to do with intensive market-gardening than with tomato culture pure and simple. In fact, part 3 starts out with the title "How to Support a Family on One-fourth Acre of Ground;" and I do think, after just going over the matter very thoroughly, there are few books in print that give the practical information on intensive gardening—that is, growing crops on a limited area of land—that this tomato-book does. It discusses particularly growing crops protected by glass or cloth. Of course, the cloth can be used only in milder weather or in milder climates. When the first edition was first put out in 1892 the book did not seem to go very fast. We printed 15,000 copies, and it took 14 years to dispose of them; but without any particular advertising the book seemed to be gradually growing in favor. The new matter added to the edition just out is mostly selections of valuable hints that have appeared in GLEANINGS during the past 14 years. The old edition contained 135 pages; so there are 23 pages of new matter in the new edition. Price 35 cents; by mail, postpaid, 6 cents extra.

"THE TRUTH SHALL MAKE YOU FREE."

"It does not hurt any business to tell the truth about it and to correct the evils which that truth reveals. Any business which can be permanently hurt by telling the truth about it ought not only to be hurt, but it ought to be destroyed."

The above words are from Hon. Albert J. Beveridge, of Indiana, author of the meat-inspection amendment in the Senate of the United States, June, 1906. To which I wish to add a hearty "Amen, Bro. Beveridge."

PATENTS.

Twenty-five Years' Practice.

PRINDLE & WILLIAMSON,

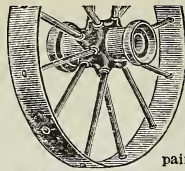
Patent practice in Patent Office and Courts.
Second National Bank Bldg., Washington, D. C.
Patent Counsel of The A. I. Root Co.

Mexican Palm-leaf Hat, 50 c.



Hand-woven by Mexicans in Mexico, from palm fiber; double weave, durable, and light weight, with colored design in brim. It retails at \$1.00; sent postpaid or 50 c. to introduce our Mexican hats and drawn-work. Same hat plain, 40 c.; both for 75 c. Large, medium, and small sizes. Fine for fishing, camping, seashore, and gardening. Hat booklet free.

The Francis E. Lester Co., Dept. A A, Mesilla Park, N. M.



STEEL WHEELS

with wide tires double the usefulness of the farm wagon. We furnish them any size to fit any axle. Cheaper than repairing old wheels. Catalogue free.

EMPIRE MFG. CO., Box 91A Quincy, Ill.



FENCE Strongest Made

Made of High Carbon coiled wire. We have no agents. Sell direct to user at factory prices on 30 days free trial. We pay all freight. Catalog shows 31 styles and heights of farm and poultry fence. It's free. Buy direct. Write today.

COILED SPRING FENCE CO.
Box 101 WINCHESTER, INDIANA.

SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"

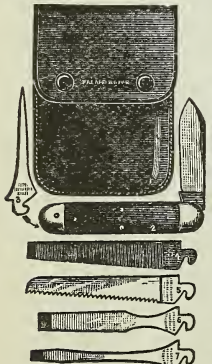
The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

F. E. Myers & Bro.
Ashland, Ohio.

ASHLAND PUMP AND HAY TOOL WORKS

No. 602 Bee-keepers' Pocket-Knife Tool Kit

Made in America



Every one has use for a Knife, Reamer, File, Saw, Chisel, or Screwdriver. This outfit is practical, yet so small, being contained in a Leather Pocket-Book 4 1/4 x 3 1/4 inches, is, by carrying it in your pocket, always at hand for immediate use, whether Camping, Boating, Teaming, Driving, in the Shop, Factory, Office Store Warehouse, Automobile, on the Farm, Bicycle, or around the Home.

Any Tool firmly attached or detached to the Pocket-Knife in a second.

Sent postpaid on receipt of price, \$2.25.

Use it five days and if not satisfactory return it and I will refund your money.

U. J. ULERY CO., No. 7 Warren St., New York, N. Y.

KEEP YOUR EGGS

all summer while prices are low, and sell next winter at a good profit. Write for our plan; it will interest you.

T. T. POULTRY CO., Springfield, Ohio.

THE BEST LIGHT

The only 100 Candle Power Light that burns its own gas and gives absolute satisfaction during a long life of efficient service.

No Grease, Smoke, Dirt or Odor. Brighter than electricity or acetylene, cheaper than kerosene. Over 100 styles. Every lamp warranted. The Best Light Co., 306 E. 5th St., Canton, O.



You Need It.

If you have only a few chickens;
If you are at all interested in poultry;
If you are breeding for fancy points;
If you cater to the market trade;
If you are in the business on large scale, you need

Ohio Poultry Journal

the paper published in the interest of the farmer, beginner, and small breeder, with plenty of pointers for the experienced fancier. Each month is especially edited for the needs of that special season of the year. Regular price is 50 cts.

AT HALF PRICE
a year, but we offer it for a short time to introduce it to readers of Gleanings. Send 25 cts. and get it a year; or if you send us \$1 for a year's subscription to Gleanings in Bee Culture we will send you Ohio Poultry Journal for a year free. Address Ohio Poultry Journal Dept. 14, Dayton, Ohio.

\$1.00 WILL PAY FOR TEN YEARS!

120 copies and no less than 3840 pages (size 8x 11 1/4 inches) of valuable poultry, pigeon, and pet-stock reading, costing us thousands of dollars to procure. Also your name and address in the "Poultry-breeders' Directory" for 10 years; revised yearly. Send \$1.00 to-day, and address

Poultry Item. Sellersville, Bucks Co., Pennsylvania

DO YOU RAISE CHICKENS?

If so, you will find the Poultry Gazette a welcome monthly visitor to your home. A down-to-date, practical poultry magazine that is the acknowledged leader of all Western poultry papers; ably edited; profusely illustrated. Subscribe now, while the price is only 25 cents a year. If you have poultry to sell, The Poultry Gazette can sell it for you.

The Poultry Gazette, Dept. B, Clay Center, Neb.

Save Money on Your
BEE-SUPPLIES

I ship several cars of
the celebrated Root
goods to Kansas City

every year, and save hun-
dreds of dollars for our cus-
tomers in Kansas, Nebras-
ka, Missouri, etc. Let me
save you a few dollars on
your goods. Write me at
Main Office. Catalog, in-
formation, etc., sent free.

Carl F. Buck

Augusta - - - Kansas

Italian

Queens



Untested Queens, 75 cts. each; six for \$4.25.
Select Untested, \$1.00. . . Tested, \$1.00.
Breeding Queens, \$3.00.

**Bee-keepers'
Supplies**

Send for our new revised catalog.
Root's Supplies are what we handle.
A full line always on hand.
We give you prompt service.
Freight rates are reasonable.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Missouri

At St. Louis

A complete line of Root's Bee-
keepers' Supplies. Unexcelled
shipping facilities for reaching
the Middle West.

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ALSO MANUFACTURER OF AND DEALER IN

**Dairymen's
and Poultrymen's
Supplies**

Low freight. . . Prompt shipments.
Factory prices. . . Write for catalog.

Send Us Your Order

THE
**COLORADO
BEE-KEEPER**

IS THE man we are interested in,
whether he has one swarm or five
hundred. If you are that man, we
are talking to you.

The goods we sell were made in
Ohio. You live in Colorado.

The point is this:

We cut out the distance, and bring
your goods home to you—and they are
Root's Goods too.

Just now we are interested in get-
ting our catalog into the hands of
every bee-keeper. It is YOURS for
the asking.

Your order to us, small or large,
means prompt service and Root Goods.

**The L. A. Watkins
Merchandise Company**
Denver, Colorado

The Best ^{is} Always The Cheapest

We have been furnishing bee-keepers all over the World with Supplies for over 25 YEARS, and no complaints.

Our PRICES are as low as any, while the QUALITY of our goods is HIGHEST. Catalog and price list free. We have for 16 years published THE AMERICAN BEE KEEPER, an illustrated 32-page monthly, edited by two of the most experienced bee-keepers in America. Fifty cents a year. Sample copy free.

The W. T. Falconer Mfg. Co., Jamestown, N. Y.

Look, Utah and Idaho

A Complete Line of The A. I. Root Company's Bee-supplies at Factory Prices

We have paid the freight to Ogden, and they cost you no more than if you buy them at Medina, Ohio. Do not delay ordering, as the honey-flow is at full blast. We also have all sizes cans and shipping-cases. Parties having honey for sale will please write us.

**Superior Honey Company, Ogden, Utah
F. W. Redfield, Manager**

Dadant's **Foundation** It Excels

Every Inch Equal to Sample

Beauty! Purity! Firmness!
No sagging; no loss.
Twenty-eighth Year.
We Guarantee Satisfaction.
Wax Worked into Foundation.

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**Bee-supplies of All Kinds**  
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~~~~~  
Beeswax wanted at all times.  
Send for Our 1906 Catalog.

~~~~~  
Dadant & Sons, Hamilton, Ill.

Root Goods for the West

New catalog now ready to mail. Write to-day. Remember I have been in the business over 20 years, and carry the largest stock in the West. Many thousands of dollars' worth of goods now on hand ready for distribution. Why put up with inferior goods when you may as well have the best? They cost you no more. In many cases I can save you money. In all cases I give the most for the money, quality considered.

They are the ROOT GOODS, which I sell here at ROOT FACTORY PRICES and DISCOUNTS. My shipping facilities are unsurpassed anywhere. Practically all points are reached by direct lines, thus insuring the lowest freight rates.

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**Jos. Nysewander, Des Moines, Iowa**  
565, 567 West Seventh Street